Bangalore Water Supply and Sewerage Board

Tender Document for the “Work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision-3rd call

TENDER REFERENCE	No.BWSSB/2023-24/ OW/ WORK _ INDENT_
TENDER NAME	Tender for the work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision-2nd call
PERIOD OF VIEW/DOWNLOAD OF TENDER DOCUMENT	From: 01 -07-2024 To: 15-07-2024
LAST DATE FOR UPLOADING TENDER DOCUMENTS	15.06.2024 16:00 hrs.
TIME AND DATE OF OPENING OF TENDERS:	16 -07-2024 after 04.05 P.M
ADDRESS FOR COMMUNICATION	Office of Executive Engineer (UFW)-2 Division 18th cross, Margosa road Malleswaram, Bangalore.

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BANGALORE WATER SUPPLY AND SEWERAGE BOARD
Office of The Executive Engineer PS&BW Division
Margosa Road,Malleshwaram, Bangalore-560012

INVITATION FOR SHORT TERM TENDER

(ONLY THROUGH KPP Portal)

IFT No.: BWSSB/EE(UFW)-2/PB/ / 2023- 24

Dtd: - 02 -2024

E-Procurement Tender Notification

The **Executive Engineer, (UFW)-2 Division, BWSSB**, Bangalore-560012 invites Item Wise rate E-Procurement Tenders in Two Cover System from Eligible registered Contractors of BWSSB/KPWD/KUWS&DB/KUIDFC/BBMP/BDA/CEIG for the "Tender for the work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision-3rd Call.

Amount put to Tender-Rs.97.15 Lakhs

Period of view/Download of Tender Document is from 01- 07 -2024 to 15 - 07 -2024 up to 16:00 hrs. Last Date for uploading tender documents is15 -07-2024. The details regarding the tender and participation in the e-procurement process can be obtained by logging on to website **www.kppp.karnataka.gov.in**

Executive Engineer
(UFW)-2 Division
18th cross, Margosa
road
Malleswaram,
Bangalore-12.

';

BANGALORE WATER SUPPLY AND SEWERAGE BOARD
Office of The Executive Engineer (UFW)-2 Division
Margosa Road,Malleshwaram, Bangalore-560012

SECTION 1

INVITATION FOR SHORT TERM TENDER (ONLY THROUGH KARNATAKA PUBLIC PROCUREMENT TENDERING)

http://kppp.karnataka.gov.in

(Short term tender)

IFT No.: BWSSB/EE(UFW)-2/PB/ / 2023- 24 Dtd: - -2024

1. **The Executive Engineer, (UFW)-2 Division, BWSSB**, Bangalore-560055 invites tenders from eligible tenderers, for the works detailed in the Table below. The tenderers may submit tenders for any or all of the works given in the Table. Two Cover Tender procedure as per Rule28 of the KTPP Act shall be followed. The Tenders are required to submit two separate sealed covers, one containing the Earnest money deposit and the details of their capability to undertake the tender (as detailed in ITT Clause 3and 6), which will be opened first and the second cover containing the price tender which will be opened only if the Tenderer is found to be qualified to execute the tendered work. The Tenderers are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Tenderers to qualify for award of the contract.

1. The Tenderers are required to pay the Earnest Money Deposit only through Karnataka public procurement portal only using any of the four modes.

1. **Credit Card (Online Payment)**
2. **Direct Debit Using Internet Banking (Online Payment)**
3. **Remittance at the Bank Counter - Challan (Offline Payment)**
4. **NEFT (National Electronic fund transfer) (Online payment).**

The details regarding their capability to undertake the tender (as detailed in ITT Clause 4) and the price tender shall be uploaded in the website. Technical details will be opened on the date and time mentioned in ITT clause 5 and evaluated. The price tender of the Tenderer, who is found to be qualified to execute the tendered works, will be opened on the date notified later. The Tenderers are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Tenderers to qualify for award of the contract.

Tender documents may be downloaded from **http://kppp.karnataka.gov.in** website only. Interested tenderers may obtain further information at the same address.

1. Additional information related to Karnataka public procurement process can be obtained through the above-mentioned website or contact Karnataka public procurement helpdesk No.**080-2550 1216 / 2550 1227**.

Bidders can access tender documents from **http://kppp.karnataka.gov.in** website only and upload the required details; those are mentioned in different sections in the bid document in to electronic tender on the website. Scanned documents those are required to be furnished as per Section 2, 3 & 4 of the bid document shall be submitted through e- procurement**.**

2. The Tender processing fee once paid will not be refunded.

1. The Last date and time for Receipt of tenders will be on 15/07/2024 upto 4:00PM Hrs **and the date of opening of tender will be on 16 /07/2024 after 4:05PM Hrs Details of the work.**

Sl. No	Name of the work	Amount put to tender Rs. (approx.) excluding GST	EMD 2%	Tender Processes sing fee	Period of completion
1	**"**Tender for the work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision".-3r[d] call	Rs. 97,15,076.00	Rs.2,29,500	As per Karnataka public procurement portal	6 Months

2. Eligibility Criteria

a) Contractors should have Electrical/civil Contractor registration in BWSSB or PWD/KUWSSB/KPTCL/CPWD/CEIG etc.,

b) Form of Tender as per KW-3 has to be uploaded.

c) Financial Turn over: The Tenderer should have in the last 5 years period achieved in Atleast Two financial years an average annual financial turnover of rupees not Less than **Rs. 115 Lakhs *(Profit & Loss Account , Balance Sheet Certified, Audited by Registered Chartered Accountant are Mandatory)***.

d) Work Qualification: The tenderer should have satisfactorily completed one similar work such as civil, electrical and mechanical works and other allied works to an extent of 50% (57.5 lakh) of APT.

e) Satisfactorily should have completed, as prime contractor, in any one year minimum quantities such supply, installation & commissioning of EMF Bulk Flow meters from 100mm dia and above – 13 nos,), fabrication supply, installation of MS specials -3000kg in continuous 12 months.

f) Third Party: The 3rd Party will be Nominated by BWSSB.

g) GST: The APT is Excluding GST. Hence the rates quoted shall be excluding GST.

h) Site Visit Report: the work has to be executed in various location of Bangalore jurisdiction coming under AEE(UFW)-2 subdivision. The Intended Tenderer has to upload the Site Visit/Inspection Report in the KPPP portal duly Signed by the Contractor & Concerned Sub divisional Officer which is Mandatory.

i) The flowmeters are remote mount type only and the 20 meters cable should be considered as standard.

j) Empty pipe detection and the advanced diagnostics are the mandatory options required in the flowmeter.

k) As per the technical specification vendor credentials along with Warranty certificate from manufacture for a period of 30 months shall be uploaded in the KPPP portal

l) Eligible tenderers will be qualified only if their available tender capacity is more than the total tender value. The available tender capacity will be calculated as under:

Assessed available tender capacity = (A*N*2.5 - B)> Rs.115 L

Where,

A = Maximum value of civil/Electrical / Mechanical engineering works executed in any one year during the last five years (updated to 2022-23 price level) taking into account the complete as well as works in progress.

N = Number of years prescribed for completion of the works for which Tenders are Invited.

B = Value, at 2022-23 price level, of existing commitments and on-going works to be Completed during the next **1 years** (period of completion of the works for which Tenders are invited)*

Uploading of the AATC certificate is compulsory.

Note: *The statements showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Employer in charge, not below the rank of an Executive Engineer or equivalent.

*The Form of Tender and demonstrated AATC should be duly signed by the Tenderer.

*The Balance Sheets for the corresponding annual turnover should be enclosed.

3. Each tenderer should further demonstrate (a) availability by owing at least 50% of the required/specified key & critical equipment for this work and (b) the remaining 50% can be deployed on lease / hire basis for all works provided, the relevant documents (commitment agreements etc.,) for availability for this work are to be furnished.

4. liquid assets and /or availability of credit facilities of no less than Rs 35 Lakhs(30% of contract value) (Credit lines/ letter of credit/ certificates from banks for meeting the fund requirement etc. (usually the equivalent of the estimated cash flow for three months in the peak construction period)*

5. Form of tender is mandatory to upload in e-procurement portal at the time of submission of documents and the rates should not be disclosed.

6. The successful bidder would be required to give performance **bank guarantee of 5%** of the contract amount plus additional security for unbalanced bid amount from a Nationalized / Scheduled Indian Bank, with jurisdiction at Bangalore as specified, towards guarantee for completion of work within the stipulated period.

7. Applications / requisitions from joint venture Firms are not acceptable.

8. Bangalore Water Supply and Sewerage Board (BWSSB) reserve the right to cancel the entire or part of this process of invitation at any time without assigning any reason.

9. For any additional information regarding the above tender, the firms who are interested to quote, may contact office of the undersigned at

*

the office address given below on all working days during office hours (10:30hours to 17:00 hours).

10. List of documents to support qualification of bidder is to be uploaded to the Karnataka public procurement website **http://kppp.karnataka.gov.in** Bidders shall submit offers that comply with the requirements of the bid document, including the basic technical design as indicated in the drawing and specifications. Alternatives will not be considered. The attention of the bidders is drawn to clause 23 regarding the rejection of the bids, which are not substantially responsive to the requirement of the bid document.

11. Other details can be seen in the tender documents. Further details may be had from this office during the office hours on all working days. Corrigendum/Addendum/Modification/corrections, if any, will be published in the Web site only.

12. Tenderers shall submit offers that comply with the requirements of the bid document.

Corrigendum / Modification / Corrections, if any will be published on the website only.

13. Tenderer should inspect the site for its conditions and should upload the site inspection letter duly signed by the concerned Assistant Executive Engineer. Not uploading the same, will lead to rejection of the Tender.

14. All other conditions put forth as per KW-3 of KTPP act shall be followed read with amendments vide G.O No.FD4PCL 2008 Bangalore Dt:14.10.2008

Executive Engineer
(UFW)-2 Division
18th cross, Margosa Road
Malleswaram, Bangalore

SECTION 2: INSTRUCTIONS TO TENDERERS (ITT)

TABLE OF CLAUSES

Table of Clauses

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A. General

1. Scope of Tender

1.1 The ***Executive Engineer EE(UFW-2) Division*** (Referred to as Employer in these documents) invites tenders following two cover e-procurement procedure, from eligible tenderers, for the construction of works (as defined in these documents and referred to as "the work") detailed in the Table given in the Invitation for Tenders (IFT).

2. Eligible Tenderers

2.1 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka

2.2 Tenders from Joint ventures are not acceptable

2.3 Contractors should have civil/Electrical **contractor license** in BWSSB or KPWD/KUWSDB/CEIG or equivalent etc., Those who does not have BWSSB registration can also participate in the tender provided they should get registered in board in case the tender is awarded before the issue of work order.

3. Qualification of the Tenderer:

3.1 All tenderers shall provide the requested information accurately and in sufficient detail in Section 3: Form of Tender and Qualification information.

3.2 To qualify for award of this contract, each tenderer in its name should have in the last five years i.e. **2019-20 to 2023-2024)**

a) Achieved in at least two financial years an average annual financial turnover (in all classes of civil/Electrical/Mechanical Engineering works only) of **Rs. 115 Lakhs.**

b) satisfactorily completed, as prime contractor in one similar work such as

civil,electrical and mechanical works and other allied works to an extent of 50%
(57 lakh) of APT.

c) Satisfactorily should have completed, as prime contractor, in any one year minimum
quantities such supply, installation & commissioning of EMF Bulk Flow meters from
100mm dia and above – 13 nos in continuous 12 months.

(d) & (E) Deleted

3.3 Each Tenderer should further demonstrate :

a) Availability by owning 50% of the required / specified key and critical equipment for this work and remaining 50% can be deployed on lease / hire basis for all works provided, the relevant documents (commitment agreements etc.,) for availability for this work shall be furnished. Some of the equipments are **NA**

b) liquid assets and /or availability of credit facilities of no less than Rs 35 Lakhs(30% of contract value) (Credit lines/ letter of credit/ certificates from banks for meeting the fund requirement etc. (usually the equivalent of the estimated cash flow for three months in the peak construction period)*

3.4 To qualify for a package of contracts made up of this and other contracts for which tenders are invited in this IFT, the Tenderer must demonstrate having experience and resources to meet the aggregate of the qualifying criteria for the individual contracts.

3.5 Sub-contractors' experience and resources shall not be taken into account in determining the Tenderer's compliance with the qualifying criteria except to the extent stated in 3.2 (d) and (e) above.

3.6 Tenderers who meet the above specified minimum qualifying criteria, will only be qualified, if their available tender capacity is more than the total tender value. The available tender capacity will be calculated as under:

Assessed available tender capacity = (A*N*2.5 - B)>115 lakhs

Where

A = Maximum value of Electrical / Mechanical engineering works executed in any one year during the last five years (updated to 2023-

24 price level) taking into account the complete as well as works in progress.

N = Number of years prescribed for completion of the works for which Tenders are Invited.

B = Value, at 2023-24 price level, of existing commitments and on-going works to be Completed during the next **1 years** (period of completion of the works for which Tenders are invited)*

Note: *The statements showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Employer in charge, not below the rank of an Executive Engineer or equivalent.

*The Form of Tender and demonstrated AATC should be duly signed by the Tenderer.

*The Balance Sheets for the corresponding annual turnover should be enclosed.

3.7 Even though the renderers meet the above criteria, they are subject to be disqualified if they have:

- Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- participated in the previous Tender for the same work and had quoted unreasonably high tender prices and could not furnish rational justification.

4. One Tender per Tenderer:

4.1 Each tenderer shall submit only one tender for one package. A tenderer who submits or participates in more than one Tender (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Tenderer's participation to be disqualified.

5. Cost of Tendering:

*

5.1 The tenderer shall bear all costs associated with the preparation and submission of his tender, and the Employer will in no case be responsible and liable for those costs.

6. Site visit:

6.1 The Tenderer at his own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for Installation and construction of the Works. The cost of visiting the Site shall be at the Tenderer's own expense.

7. Content of Tender documents

7.1 The set of tender documents shall have all the Sections given in Page 2:

7.2 Both the sets should be completed and returned with the tender.

8. Clarification of Tender Documents

8.1 A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by cable (hereinafter "cable" includes telex, facsimile and e-mail) at the Employer's address indicated in the invitation to tender. The Employer will respond to any request for clarification which he receives earlier than 15 days prior to the deadline for submission of tenders. Copies of the Employer's response will be forwarded to all purchasers of the tender documents through e-mail, including a description of the enquiry but without identifying its source. Same will be available in the website of e-tender www.mytenderwizard.com/BWSSB

8.2 Pre-tender meeting:

8.2.1 No pre-tender meeting which will be conducted.

8.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

8.2.3 The tenderer is requested to submit any questions in writing or by cable to reach the Employer not later than one week before the meeting.

8.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the tender documents. Any modification of the tender documents listed in Sub-Clause 7.1 which may become necessary as a result of the pre-tender meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 9 and not through the minutes of the pre-tender meeting.

8.2.5 Non-attendance at the pre-tender meeting will not be a cause for disqualification of a tenderer.

9. Amendment of Tender documents

9.1 Before the deadline for submission of tenders, the Employer may modify the tender documents by issuing addenda.

9.2 Any addendum thus issued shall be part of the tender documents and shall be communicated in writing or by cable to all the purchasers of the tender documents.

9.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend as necessary the deadline for submission of tenders, in accordance with Sub-Clause 16.2 below.

C. Preparation of Tenders

10. Documents comprising the Tender

10.1 The tender submitted in e-tender by the Tenderer shall contain the documents as follows:

(a) Scanned copy of Earnest Money Deposit;
(b) Scanned copies of Qualification Information as per formats given in Section 3;
(c) The Tender (in the format indicated in Section 4)
(d) Priced Bill of Quantities (Section 9);
and any other materials required to be completed and submitted by Tenderers in accordance with these instructions. The documents listed under Sections 3, 4, 6 and 9 shall be filled in without exception. The Earnest Money Deposit shall be submitted to the Tender inviting authority on or before the time of submission mentioned in IFT. PHOTOCOPIES OF THE DOCUEMNTS SHOULD BE NOTARISED.

10.2 Tenderers submitting tenders together with other contracts stated in the IFT to form a package will so indicate in the tender together with any discounts offered for the award of more than one contract.

11. Tender prices

11.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Tenderer.

11.2 The bidder shall fill in the unit rates in figures for all items of the Works described in the Bill of Quantities. The system will automatically convert the unit rates mentioned in figures to words and also calculate the amount of that item as well as the total Bid value. *Items for which no rate is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates in the Bill of Quantities*

11.3 All duties, taxes, and other levies payable by the contractor under the contract, or for any other cause, shall be included in the rates, prices and total Tender Price submitted by the Tenderer.

Note: *"Bidders may like to ascertain availability of excise/custom duty exemption benefits available in India to the contracts financed under World Bank loan/credits. They are solely responsible for obtaining such benefits which they have considered in their bid and in case of failure to receive such benefits for*

reasons whatsoever, the employer will not compensate the bidder (contractor). Where the bidder has quoted taking into account such benefits, he must give all information required for issue of certificates in terms of such notifications as per form attached to the Qualification Information in the bid. To the extent the employer determines the quantity indicated therein are reasonable keeping in view the bill of quantities, construction programme and methodology, the certificates will be issued within 60 [sixty] days of signing of contract and no subsequent changes will be permitted. No certificate will be issued for items where no quantity/capacity of equipment is indicated in the statement. The bids which do not conform to the above provisions will be treated as non responsive and rejected. Any delay in procurement of the construction equipment /machinery/goods as a result of the above shall not be a cause for granting any extension of time."

11.4 Deleted

12. Tender validity

12.1 Tenders shall remain valid for a period not less than **ninety days** after the deadline date for tender submission specified in Clause 16. A tender valid for a shorter period shall be rejected by the Employer as non-responsive.

12.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the Tenderers may extend the period of validity for a specified additional period. The request and the Tenderers' responses shall be made in writing or by cable or e-mail. A Tenderer may refuse the request without forfeiting his earnest money deposit. A Tenderer agreeing to the request will not be required or permitted to modify his tender, but will be required to extend the validity of his earnest money deposit for a period of the extension, and in compliance with Clause 13 in all respects.

13. Earnest money deposit

13.1 The Tenderer shall furnish, as part of his tender, earnest money deposit in the amount as shown in column 4 of the Table of IFT for this particular work.

13.2 Instruments having fixed validity issued as earnest money deposit for the tender shall be valid for 45 days beyond the validity of the tender.

13.3 Any tender not accompanied by an acceptable earnest money deposit and not secured as indicated in Sub-Clauses 13.1 and 13.2 above shall be rejected by the Employer as non-responsive.

13.4 The earnest money deposit of unsuccessful Tenderers will be returned within 30 days of the end of the tender validity period specified in Sub-Clause 12.1.

13.5 The earnest money deposit of the successful Tenderer will be discharged when the Tenderer has signed the Agreement and furnished the required Performance Security.

13.6 The earnest money deposit may be forfeited:

(a) if the Tenderer withdraws the Tender after tender opening during the period of tender validity;
(b) if the Tenderer does not accept the correction of the Tender Price, pursuant to Clause 24; or
(c) in the case of a successful Tenderer, if the Tenderer fails within the specified time limit to
(i) sign the Agreement; or
(ii) furnish the required Security deposit

14. Format and signing of Tender

14.1 The completed bid comprising of documents indicated in ITB 12, should be uploaded in the tender wizard of BWSSB through "e-tendering" along with scanned copies of requisite certificates those are mentioned in different sections in the bid document and scanned copy of Bid Security / EMD in case it is provided in the form of Banker's cheque/ Demand draft/Pay Order

14.2 All the documents should be uploaded to the tender wizard of BWSSB. Tenderer should take a print out of the declaration letter provided in the website on company letter head and should sign, stamp and upload the same to the tender wizard of BWSSB.

14.3 Deleted

D. Submission of Tenders

15. Up-loading & submission of tenders

15.1 The tenders should be uploaded only through www.eproc.karnataka.gov.in. Tender should contain

A. Technical Tender consisting of following:

a. All the documents with required details in prescribed format; those are mentioned in different sections in the Tender. Form of Tender, Declaration statement regarding Customs/ Excise duty exemption for materials/construction equipment brought to site as mentioned in Section 2, etc., shall be downloaded, filled with required details, signed, scanned & uploaded to the e-tender website https://www.eproc.karnataka.gov.inon or before the time and date indicated in notification /Section I IFT.

b. **Tender security.** As per E procurement portal

The above documents along with notarized copies of documentary evidences as indicated in Section—II ITT, Section-III Qualification information & Section IV Forms of Tender shall be scanned and uploaded to the website compulsorily, failing which tender will be rejected in view of incomplete bid document and

B. Financial Tender consisting of Bill of Quantities (file name: BOQ.xls). *The tenderer shall down load the bill of quantities and key in the rates (in figures only) in the Bill of Quantities sheet and upload the same file on to the website on or before the time and date indicated in notification /Section I IFT.*

Scanned copy of Bid security provided in the form of Banker's cheque/ Demand draft/Pay Order, is to be uploaded to the E procurement portal (giving details on the name and package to which Bid is submitted)

NOTE:

1. URL of the Website for tender submission through e-tender & Address for submission of Hard copy of Tender security are as follows:

i https://www.eproc.karnataka.gov.in**.**

ii **Executive Engineer (UFW)-2,**
Bangalore Water Supply and Sewerage Board,
18th cross, Margosa road, Malleswaram, Bangalore.

2. The details related to submission of tenders, downloading / uploading of documents or other details are available online in the help wizard, Vendor manual & FAQ of above website. The same is provided along with sample formats in Annexure-I of the Bid document for ready reference.

15.2 Deleted

15.3 Unique Identification Number will be automatically generated by the server with time -stamp and sent to the account of the bidder as an acknowledgement after bidder finally uploads the bids.

15.4 Deleted

16. Deadline for submission of the Tenders

16.1 Tenders must be received by the Employer at the address specified above no later than _____ **after 17.00 hrs.** In the event of the specified date for the submission of tenders being declared a holiday for the Employer, the tenders will be received up to the appointed time on the next working day.

16.2 The Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Employer and the Tenderers previously subject to the original deadline will then be subject to the new deadline.

17. Late Tenders

17.1 Any Tender received by the Employer after the deadline prescribed in Clause 16 will be returned unopened to the Tenderer

17.2 The software of E procurement portal will not allow the Bidder to upload the documents after expiration of the stipulated date & time of Bid submission. Employer will not be responsible for non-receipt of bids on the stipulated date & time prescribed in clause 16, due to Internet Problems, improper uploading or any other related problems. In case of connectivity problems, Tenderer may contact Helpdesk of the e procurement portal office at MS building, Bangalore and may also draw the attention of tender inviting authority.

18. Modification and Withdrawal of Tenders

18.1 Tenderers may "modify" and "withdraw" their tenders multiple numbers of times, until the deadline for submission of tenders by operating the relevant provision made in e-tendering. If the Tenderer withdraws the tender before the deadline for submission of tenders and later if he is interested to submit the tender once again, may do so within the stipulated date & time as mentioned in Clause 16. In this case within the stipulated date & time, the tenderer can once again submit the requisition to the officer inviting tenders for access to the withdrawn tender document for resubmission. For this tenderer need not make any additional payment towards the cost of tender document. Communication of modification / withdrawal by other means will not be accepted.

18.2 Deleted.

18.3 No Tender may be modified after the deadline for submission of Tenders.

18.4 Withdrawal or modification of a Tender between the deadline for submission of Tenders and the expiration of the original period of Tender validity specified in Clause 12.1 above or as extended pursuant to Clause 12.2 may result in the forfeiture of the earnest money deposit pursuant to Clause 13.

18.5 Tenderers may offer discounts for individual items by simply modifying the quoted unit price in the Bill of Quantities. Also, Tenderer may enter their overall discount, at specified location in the Bill of Quantities only, by submitting tender modifications in accordance with this clause. Communication of discount by other means will not be accepted.

E. Tender opening and evaluation

19. Opening of Technical portion of Tenders and evaluation to determine qualified Tenderers:

19.1 The Employer will open the Technical details of all the Tenders received (except those withdrawn), including modifications made pursuant to Clause 18, in the presence of the Tenderers or their representatives who choose to attend at ***17:00*** hours on the date and the place specified in Clause 16. In the event of the specified date of Tender opening being

declared a holiday for the Employer, the Tenders will be opened at the appointed time and location on the next working day.

19.2 WITHDRAWAL proposal submitted pursuant to clause 18 shall be read out first and their bids shall not be opened.

19.3 The Tenderers names, the presence or absence of earnest money deposit (amount, format and validity), the submission of qualification information and such other information as the Employer may consider appropriate will be announced by the Employer at the opening.

19.4 The Employer shall prepare minutes of the Tender opening, including the information disclosed to those present in accordance with Sub-Clause 19.3.

19.5 The Price Tenders of all the Tenderers including modifications for Financial tenders can not be opened as this is programmed to open later after evaluation of the Technical details of the participating Tenderers.

19.6 The Employer will evaluate and determine whether each tender (a) meets the eligibility criteria defined in ITT Clause 2; (b) is accompanied by the required earnest money deposit as per stipulations in ITT Clause and (c) meets the minimum qualification criteria stipulated in ITT Clause 3. The Employer will draw out a list of qualified Tenderers.

20. Opening of Price Tender of qualified Tenderers and evaluation:

20.1 The Employer will inform all the Qualified Tenderers the time, date and venue fixed for the opening of the price Tenders. The Employer will open the price tender of Qualified Tenderers at the appointed time and date in the presence of the Tenders or their representatives who choose to attend. In the event of the specified date of Price tender opening being declared a holiday for the Employer, the price tenders will be opened at the appointed time and location on the next working day.

20.2 Deleted.

20.3 The Tenderers' names, the Tender prices, the total amount of each Tender, any discounts, and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. No Tender shall be rejected at Tender opening.

20.4 The Employer shall prepare minutes of the Price Tender opening, including the information disclosed to those present in accordance with Sub-Clause 20.3.

21. Process to be confidential

21.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.

22 Clarifications of Tenders

22.1 To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Tenders in accordance with Clause 24.

22.2 Subject to sub-clause 22.1, no Tenderer shall contact the Employer on any matter relating to its Tender from the time of the Tender opening to the time the contract is awarded. If the Tenderer wishes to bring additional information to the notice of the Employer, it should do so in writing.

22.3 Any effort by the Tenderer to influence the Employer in the Employer's Tender evaluation, Tender comparison or contract award decisions may result in the rejection of the Tenderers' Tender.

23. Examination of Tenders and determination of responsiveness

23.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender; (a) has been properly signed; and; (b) is substantially responsive to the requirements of the Tender documents like [(a)Form of Tender, (b)Declaration statement regarding Customs/ Excise duty exemption for materials/ construction equipment brought to site as mentioned in Section 2 etc.,] Scanned / uploaded [including documents those are required to be furnished as per Section 2, 3 & 4 of the tender,]; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the tendering documents.

23.2 A substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tender documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Tender documents, the Employer's rights or the Tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.

23.3 If a Tender is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

24. Correction of errors

24.1 (a) Once the Tenderer key in the rates in figures, in the Bill of quantities provided, rate in words will be auto generated by the system.

(b) Once the Tenderer key in the rates in figures, in the Bill of quantities provided, the system will automatically calculate the amount of that item as well as the total Bid value.

24.2 Deleted

25. Evaluation and comparison of Tenders

25.1 The Employer will evaluate and compare only the Tenders determined to be substantially responsive in accordance with Clause 23.

25.2 In evaluating the Tenders, the Employer will determine for each Tender the evaluated Tender Price by adjusting the Tender Price as follows:

(a) making any correction for errors pursuant to Clause 24; and

(b) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 18.5.

25.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Tender documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Tender evaluation.

25.4 The estimated effect of the price adjustment conditions under Clause 41 of the Conditions of Contract, during the implementation of the Contract, will not be taken into account in tender Evaluation

25.5 If the tender of the successful tenderer is seriously unbalanced in relation to the Employer's estimate of the cost of the work to be performed under the contract, the Employer may require the Tenderer to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 29 be increased at the expense of the successful Tenderer to a level sufficient to protect the Employer against financial loss in the event of default of the successful under the contract.

F. Award of Contract

26. Award criteria

26.1 Subject to Clause 27, the Employer will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tender documents and who has offered the lowest evaluated Tender Price, provided that such Tenderer has been determined to be (a) eligible in accordance with the provisions of Clause 2, and (b) qualified in accordance with the provisions of Clause 3.

27. Employer's right to accept any Tender and to reject any or all Tenders

27.1 Notwithstanding Clause 26, the Employer reserves the right to accept or reject any Tender, and to cancel the Tender process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the grounds for the Employer's action.

28. Notification of award and signing of Agreement

28.1 The Tenderer whose Tender has been accepted will be notified of the award by the Employer prior to expiration of the Tender validity period by cable, telex, e-mail or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

28.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of Security deposit in accordance with the provisions of Clause 29.

28.3 The Agreement will incorporate all agreements between the Employer and the successful Tenderer. It will be kept ready for signature of the successful Tenderer in the office of Employer within 30 days following the notification of award along with the Letter of Acceptance. Within 20 days of receipt, the successful Tenderer will sign the Agreement and deliver it to the Employer.

28.4 Upon the furnishing by the successful Tenderer of the Performance Security, the Employer will promptly notify the other Tenderers that their Tenders have been unsuccessful.

29. Security deposit

29.1 Within 20 days of receipt of the Letter of Acceptance, the successful Tenderer shall deliver to the Employer a Security deposit in any of the forms given below for an amount equivalent to 5% of the Contract price plus additional security for unbalanced tenders in accordance with Clause 25.5 of ITT and Clause 44 of the Conditions of Contract. :

- Cash or

- Banker’s cheque/Demand draft,/Pay Order in favour of ***Chairman, BWSSB*** payable at ***Bangalore*** or

- A bank guarantee in the form given in Section 10; or

29.2 If the security deposit is provided by the successful Tenderer in the form of a Bank Guarantee, it shall be issued either by a Nationalized/Scheduled bank.

29.3 The security deposit if furnished in cash or demand draft can, if requested, be converted to interest bearing securities at the cost of the contractor.

29.4 Failure of the successful Tenderer to comply with the requirements of Sub-Clause 29.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Earnest money deposit.

30 Advance Payment and Security:

30.1 No Advance payment will be provided.

31. Corrupt or Fraudulent practices

31.1 The GOK requires that the Tenderers/Suppliers/Contractors, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, GOK :

(a) will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(b) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a GOK contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a GOK contract.

31.2 Furthermore, Tenderers shall be aware of the provision stated in sub-clause 50.2 of the Conditions of Contract.

Executive

Engineer

(UFW)-2

Division

SECTION 3:

QUALIFICATION INFORMATION

Qualification Information

The Following form is to be downloaded, particulars are to be filled, scanned and uploaded by the Bidder, to **website:** http://kppp.karnataka.gov.in along with the Bid.

Note: The detailed procedure for downloading/uploading the documents will be available in Help Wizard, Vendor manual & FAQ of the above mentioned website.

The information to be filled in by the Tenderer hereunder will be used for purposes of computing Tender capacity as provided for in Clause 3 of the Instructions to Tenderers. This information will not be incorporated in the Contract.

1.1 Constitution or legal status of Tenderer [Attach copy] (Attach Copy)

Place of Registration _____

(Attach Copy)

Principal place of business: _____

1.2 Total value of civil, electrical and mechanical engineering 2018–19_____

Works executed and payments received in the last five years (in Rs. Lakhs)[1]

2019 – 20_____

2020 - 21_____

2021 - 22_____

2022 - 23_____

1.3 Work performed as Prime Contractor (in the same name) on works of similar nature over during the five years specified in 1.2 above.

Project Name	Name of the Employer	Description of Work	Contract Number	Value of Contract Rs. In Lakhs	Date of issue of Work Order	Specified Period of Completion	Actual Date of Completion	Remarks explaining reasons for delay in completion of work
1	2	3	4	5	6	7	8	9

1.4 Quantities of work executed as prime contractor (in the same name) during the last five years specified in 1.2 above:

Year		Name of Work	Name of Employer	Quantity of work performed			Remarks (Indicate contract reference)
				Earthwork excavation	MS specials,	Earthworks	
2018-19							
2019-20							
2020-21							
2021-22							
2022-23							

1.5. Information on works for which Tenders have been submitted and works which are yet to be completed as on the date of this Tender.

(A) Existing commitments and on-going works:

Description of work	Place & Stat	Contract No. &	Name & Addres	Value of Contr	Stipulated period Completi	Value of Works	Anticipated Date of

[1] Attach Certificate from Chartered Accountant

	e	Date	s of Employer	act (Rs. Lakhs)	on	remaining to be complete (Rs. Lakhs)	Completion
1	2	3	4	5	6	7	8

(B) <u>Works for which Tenders already submitted:</u>

Description of work	Place & State	Name & Address of Employer	Estimated Value of Works (Rs. Lakhs)	Stipulated Date period of Completion	Date When decision is expected	Remarks if any
1	2	3	4	5	6	7

1.6 The following items of equipment are considered essential for successfully carrying out the works. The tenderer should furnish all the information listed below.

Item of Equipment	Requirement	Owned and available stipulated date period of completion when decision is expected					Remarks.
1	No.	Capacity	Owned	Number/ Capacity	Age/Condition		

1.7 Reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the last five years;

1.8 Qualification and experience of the key technical and management personnel in permanent employment with the tenderer and those that are proposed to be deployed on this contract, if awarded.

1.9 Name, address, and telephone, telex, and fax numbers of the Tenderers' bankers who may provide references if contacted by the Employer.

1.10 Proposals for subcontracting components of works amounting to more than 20% of the contract price (for each, the qualification and experience of the identified sub-contractor in the relevant field should be attached).

BANKER'S CERTIFICATE

This is to certify that M/s. ..... is a reputed company with a good financial standing. If the contract for this work, namely ..... (name of the work) is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. ..... to meet the working capital requirements for executing the above contract

Sd/-

Name of the Bank, Senior Bank Manger Address: .....

SECTION 4;

TABLE OF FORMS:

- **FORM OF TENDER**
- **LETTER OF ACCEPTANCE**

- **NOTICE TO PROCEED WITH THE WORK**
- **AGREEMENT FORM.**

Form of Tender

Description of the Works: **Tender for the work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision 3rd Call**

Tender

To
Office of Executive Engineer
(UFW)-2 Division
18th cross, Margosa road
Malleswaram, Bangalore.

GENTLEMEN,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying this Tender for the Contract Price of _____ [in figures] (_____) [in letters].

This Tender and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any Tender you receive.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We hereby confirm that this Tender complies with the Tender validity and Earnest money deposit required by the Tender documents.

We attach herewith our current income-tax clearance certificate.

Yours faithfully,

Authorized Signature:

Name & Title of Signatory:

_____

Name of Tenderer _____

Address: ----------

NOTE: This form shall be download, filled and printed on the Company / firms / contractors letter head, Signed, Scanned and uploaded. Failure to furnish the signed copy will lead to Non-Responsive Tender

Letter of Acceptance

To:_____

–

(Name and Address of the Contractor)

Dear Sirs,

This is to notify you that your Tender dated_____for execution of the _____(name of the contract and identification number, as given in the instructions to Tenderers) for the Contract Price of Rupees_____(_____) (amount in works and figures), as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by your Agency.

You are hereby requested to furnish Security deposit plus additional security for unbalanced tenders in terms of Clause 25.5 of ITT, in the form detailed in Clause 29.1 of ITT for an amount of Rs.———— within 20 days of the receipt of this letter of acceptance valid up to 30 days from the date of expiry of Defects Liability Period i.e. up to ..... and sign the contract, failing which action as stated in Para 29.4 of ITT will be taken.

.

Yours faithfully,

Authorized Signature
Name and Title of Signatory
` Name of the Agency.

.....

Issue of Notice to proceed with the work

To

_____(name and address of the Contractor)

Dear Sirs:

Pursuant to your furnishing the requisite security deposit as stipulated in ITT Clause 29.1 and signing of the contract agreement for the construction of ———————[name of the contract] a Tender Price of Rs.———————, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory authorized to sign on behalf of Employer)

Agreement Form

Agreement

This agreement, made the _____day of _____20_____, between_____ _____[name and address of Employer] (hereinafter called "the Employer") of the one part and _____ _____ _____ __ _____[name and address of contractor] (hereinafter called "the Contractor") of the other part.

Whereas the Employer is desirous that the Contractor execute _____ _____ _____[name and identification number of Contract] (hereinafter called "the Works") and the Employer has accepted the Tender by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a contract price of Rupees.....

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
   i) Letter of Acceptance;
   ii) Notice to proceed with the works;
   iii) Contractor's Tender;
   iv) Contract Data;
   v) Conditions of contract (including Special Conditions of Contract);
   vi) Specifications;
   vii) Drawings;
   viii) Bill of Quantities; and
   ix) Any other document listed in the Contract Data as forming part of the contract.
5. Jurisdiction of Courts/Arbitration: The sitting of arbitration shall be held at Bangalore only and nowhere else.
6. Dispute of any kind arising out of the contract shall be resolved within the jurisdiction of Bangalore City only and the parties agree and clearly understand that the courts/tribunals situated at Bangalore Metropolitan City have exclusive jurisdiction for the redressal of the disputes arising out of the contract and at no other place
7. The Parties further agree and understand that the place or places of issue of bank guarantee other than Bangalore will have no jurisdiction to resolve dispute of any kind relating to enforcement of the bank guarantees submitted by the contractor at Bangalore for the execution of the contract at Bangalore.

8. The contractor shall comply with all the legal requirements in the matter of employment of workmen and provide all safety gadgets to the workmen while working in the hazards place or conditions during the execution of the contract.
9. Contractor shall be fully responsible in the event of death of employee/workman during the execution of the work and liable to pay adequate compensation to the dependents of employee/workman as per law.
10. Contractor shall be fully responsible in the event of death of employee/workman during the execution of the work and liable to pay adequate compensation to the dependents of employee/workman as per law.
11. On his/their failure, if the Board is made to pay compensation the same shall be recovered by the Board from the contractor out of the amounts due to the contractor or by appropriate legal action.
12. If death of any employees occurs during execution of work due to negligence of contractor, the contract will be liable for termination.
13. In the event of such termination, the employer may consider blacklisting of firm after due notice.
14. In case of any death or accident the contract will be cancelled after following due process.
15. The Board will be entitled to claim exemplary damages from the contractor in case of death of any work man / employees of the contractor in any of the BWSSB works as it damages the reputation of the Board.
16. Road cutting machine should be used mandatorily while executing the work.
17. Any utilities encountered during execution if damaged by the contractor, the same need to be rectified immediately without any delay at his own cost with due approval from the concerned

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____
was hereunto affixed in the presence of:
Signed, Sealed and Delivered by the said _____
_____

in the presence of:
Binding Signature of Employer _____
Binding Signature of Contractor _____

BANKER'S CERTIFICATE

This is to certify that M/s. ..... is a reputed company with a good financial standing. If the contract for this work, namely ..... (name of the work) is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. ..... to meet the working capital requirements for executing the above contract

Sd/-
Name of the Bank, Senior Bank Manger
Address:.....

1.11 Proposals for subcontracting components of works amounting to more than 20% of the contract price .

Item of Work	Value of Sub-Contract	Identified Sub-Contractor (Name and address)	Experience of similar work [2]

1.12 Information on litigations in which the Tenderer is involved:

Other Party (ies)	Employer	Details of dispute	Amount involved	Remarks showing present status

1.13 The proposed methodology and program of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

[2] Attach Certificate from the respective Employers (scanned & Uploaded)

SECTION 5: CONDITIONS OF CONTRACT

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Conditions of Contract

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Bold letters are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Tender.

Compensation events are those defined in Clause 38 hereunder.

The **Completion Date** is the date of completion of the Works as certified by the Employer in accordance with Sub Clause 46.1.

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.2 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body whose Tender to carry out the Works has been accepted by the Employer.

The **Contractor's Tender** is the completed Tender document submitted by the Contractor to the Employer.

The **Contract price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects liability period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Employer by issuing an extension of time.

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Employer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

A **Variation** is an instruction given by the Employer which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Employer will provide instructions clarifying queries about the Conditions of Contract.

2.2 The documents forming the Contract shall be interpreted in the following order of priority:

(1) Agreement
(2) Letter of Acceptance, notice to proceed with the works
(3) Contractor’s Tender
(4) Contract Data
(5) Conditions of Contract
(6) Specifications
(7) Drawings
(8) Bill of quantities and
(9) any other document listed in the Contract Data as forming part of the Contract.

3. Law governing contract

3.1 The law governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

4. Employer's decisions

4.1 Except where otherwise specifically stated, the Employer will decide contractual matters between the Employer and the Contractor .

5. Delegation

5.1 The Employer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7. Subcontracting

7.1 Deleted

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer.

9. Personnel

9.1 The Contractor shall employ the technical personnel (of number and qualifications) as may be stipulated by GOK from time to time during the execution of the work. The technical staff so employed shall be available at site as may be stipulated by the Employer.

9.2 If the Employer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. Employer's and Contractor's risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's risks

11.1 The Employer is responsible for the excepted risks which are:

(a) rebellion, riot commotion or disorder unless solely restricted to employees of the Contractor or his Sub-Contractors arising from the conduct of the Works; or

(b) a cause due solely to the design of the Works, other than the Contractor's design; or

(c) any operation of the forces of nature (in so far as it occurs on the Site) which an experienced contractor:

(i) could not have reasonably foreseen; or

(ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures;

(A) prevent loss or damage to physical property from occurring by taking appropriate measures or

(B) insure against such loss or damage

12. Contractor's risks

12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Insurance:

13.1 The Contractor shall prior to commencing the works, effect and thereafter maintain insurances , in the joint names of the Employer and the Contractor, (cover from the first working day after the Start Date to the end of Defects Liability Period), in the amounts stated in the Contract Data :

(a) for loss of or damage to the Works, Plants and Materials and the Contractor's equipment;

(b) for liability of both Parties for loss, damage, death and injury to third parties or their property arising out of the Contractor's performance of the Contract including the Contractor's liability for damage to the Employer's property other than the Works and

(c) for liability of both Parties and of any Employer's representative for death and injury to the Contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their Employees.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Employer for his approval before the Start Date. All such insurance shall provide for compensation to be payable to rectify the loss or damage incurred. All payments received from insurers relating to loss or damage shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

13.3 If the Contractor fails to effect or keep in force any of the insurances referred to in the previous sub-clauses or fails to provide satisfactory evidence, policies or receipts, the Employer may without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor. If no payments is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Employer.

13.5 Both Parties shall comply with any conditions of the insurance policies.

14. Site Investigation Reports:

14.1 The Contractor, in preparing the tender, shall rely on any site investigation reports referred to in the Contract data, supplemented by any information available to the Tenderer.

15. Queries about the Contract Data

15.1 The Employer will clarify queries on the Contract Data.

16. Contractor to construct the Works

16.1 The Contractor shall construct the Works in accordance with the Specification and Drawings.

17. The Works to be completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Intended Completion Date.

18. Approval by the Employer:

18.1 The Contractor shall submit Specification and drawings showing the proposed Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.

18.2 The Contractor shall be responsible for the design of Temporary Works

18.3 The Employer’s approval shall not alter the Contractor’s responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of third parties to the design of the temporary Works where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Employer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Employer of such discoveries and carry out the Employer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

22. Access to the Site

22.1 The Contractor shall allow the Employer and any person authorized by the Employer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

23. Instructions

23.1 The Contractor shall carry out all instructions of the Employer which comply with the applicable laws where the Site is located.

24. Procedure for resolution of Disputes:

24.1 If the Contractor is not satisfied with the decision taken by the Employer, the dispute shall be referred by either party to Arbitration within 30 days of the notification of the Employer's decision.

24.2 If neither party refers the dispute to Arbitration within the above 30 days, the Employer's decision will be final and binding.

24.3 The Arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

B. Time Control

25. Program

25.1 Within the time stated in the Contract Data the Contractor shall submit to the Employer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.

25.2 The Employer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the effect of Variations and Compensation Events.

26. Extension of the Intended Completion Date

26.1 The Employer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.

26.2 The Employer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information.

27. Delays ordered by the Employer

27.1 The Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

28. Management meetings

28.1 The Employer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the progress achieved and the plans for remaining work.

28.2 The responsibility of the parties for actions to be taken is to be decided by the Employer either at the management meeting or after the management

meeting and stated in writing to be distributed to all who attended the meeting.

C. Quality Control

29. Identifying defects

29.1 The Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any work that the Employer considers may have a Defect

30. Tests

30.1 If the Employer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

31. Correction of defects

31.1 The Employer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

31.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Employer’s notice.

32. Uncorrected defects

32.1 If the Contractor has not corrected a Defect within the time specified in the Employer’s notice, the Employer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. Cost Control

33. Bill of Quantities (BOQ)

33.1 The BOQ shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

33.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item

34. Variations

34.1 The Employer shall have power to order the Contractor to do any or all of the following as considered necessary or advisable during the progress of the work by him

(a) Increase or decrease of any item of work included in the Bill of Quantities (BOQ);
(b) Omit any item of work;
(c) Change the character or quality or kind of any item of work;
(d) Change the levels, lines, positions and dimensions of any part of the work;
(e) Execute additional items of work of any kind necessary for the completion of the works; and
(f) Change in any specified sequence, methods or timing of construction of any part of the work.

34.2 The Contractor shall be bound to carry out the work in accordance with any instructions in this connection, which may be given to him in writing by the Employer and such alteration shall not vitiate or invalidate the contract.

34.3 Variations shall not be made by the Contractor without an order in writing by the Employer, provided that no order in writing shall be required for increase or decrease in the quantity of an item appearing in the BOQ so long as the work executed conforms to the approved drawings.

34.4 The Contractor shall promptly request in writing the Employer to confirm verbal orders and the officer issuing oral instructions shall confirm it in writing with in 30days, failing which the work shall be carried out as though there is no variation. In case variation is approved, it shall be accompanied by BOQ, failing which the contractor shall be responsible for deviation, if any. Further, approval of the Board has to be obtained for the variation exceeding 5%.

35. Payments for Variations

35.1 Payment for increase in the quantities of an item in the BOQ up to 25% of that provided in the Bill of Quantities shall be made at the rates quoted by the Contractor.

35.2 For quantities in excess of 125% of the tendered quantity of an item as given in the BOQ, the Contractor shall be paid at the rate entered in or derived from in the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.

35.3 If there is no rate for the additional, substituted or altered item of the work in the BOQ, efforts would be made to derive the rates from those given in the BOQ or the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) and if found feasible the payment would be made at the derived rate for the item plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract

35.4 If the rates for additional, substituted or altered item of work cannot be determined either as at 35.1 or 35.2 or 35.3 above, the Contractor shall be requested to submit his quotation for the items supported by analysis of the rate or rates claimed, within 7 days.

35.5 If the Contractor's quotation is determined unreasonable, the Employer may order the Variation and make a change to the Contract Price which shall be based on Employer’s own forecast of the effects of the Variation on the Contractor's costs.

35.6 If the Employer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

35.7 Under no circumstances the Contractor shall suspend the work on the plea of non-settlement of rates for items falling under this Clause.

36. Submission of bills for payment

36.1 The Contractor shall submit to the Employer monthly bills of the value of the work completed less the cumulative amount paid previously.

36.2 The Employer shall check the Contractor's bill and determine the value of the work executed which shall comprise of (i) value of the quantities of the items in the BOQ completed and (ii) valuation of Variations and Compensation Events.

36.3 The Employer may exclude any item paid in a previous bill or reduce the proportion of any item previously paid in the light of later information.

37. Payments

37.1 Payments shall be adjusted for deductions for advance payments, other recoveries in terms of the contract and taxes, at source, as applicable under the law. The Employer shall pay the Contractor the within 60 days of submission of bill. The Contractor shall be liable to pay liquidated damages for shortfall in progress. For Progress beyond the agreed programme, payment is subject to availability of the grants.

37.2 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

38. Compensation events

38.1 The following are Compensation events unless they are caused by the Contractor:

(a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.
(b) The Employer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.
(c) The Employer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.
(d) The Employer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
(e) The effect on the Contractor of any of the Employer’s Risks.
(f) The Employer unreasonably delays issuing a Certificate of Completion.
(g) Other Compensation Events listed in the Contract Data or mentioned in the Contract.

38.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Employer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

38.3 As soon as information demonstrating the effect of each Compensation event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Employer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Employer shall adjust the Contract Price based on Employer's own forecast. The Employer will assume that the Contractor will react competently and promptly to the event.

38.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Employer.

39. Tax

39.1 The rates quoted by the Contractor shall be deemed to be **exclusive of the GST** and other taxes that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

40. Price Adjustment:

40.1 Deleted

41. Liquidated damages

41.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the Contract Data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

41.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

42. Advance Payments:

42.1 No Advance payment will be provided.

42.2 Deleted

42.3 Deleted.

43. Securities:

43.1 The Security deposit (including additional security for unbalanced tenders) shall be provided to the Employer no later than the date specified in the Letter

of Acceptance and shall be issued in an amount and form and type of instrument acceptable to the Employer. The Security deposit shall be valid until a date 30 days from the date of expiry of Defects Liability Period and the additional security for unbalanced tenders shall be valid until a date 30 days from the date of issue of the certificate of completion.

44. Cost of Repairs:

44.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

45. Completion

45.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.

46. Taking over

46.1 The Employer shall take over the Site and the Works within seven days of issuing a certificate of Completion.

47. Final account

47.1 The Contractor shall supply to the Employer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 90 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer shall issue within 90 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the amount payable to the Contractor and make payment within 60 days of receiving the Contractor’s revised account.

48. As built drawings and /or Operating and Maintenance Manuals

48.1 If “as built”[3] Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

48.2 If the Contractor does not supply the Drawings by the dates stated in the Contract Data, or they do not receive the Employer’s approval, the Employer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

49. Termination

[3] Completion Drawings

49.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.

49.2 Fundamental breaches of Contract include, but shall not be limited to the following:

(a) the Contractor stops work for 45 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Employer;

(b) The Contractor becomes bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(c) the Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Employer;

(d) the Contractor does not maintain a security which is required;

(e) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and

(f) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

For the purpose of this paragraph : “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.”

49.3 When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 49.2 above, the Employer shall decide whether the breach is fundamental or not.

49.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

49.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

50. Payment upon Termination

50.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Employer shall prepare bill for the value of the work done less advance payments received up to the date of the bill, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

50.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Employer shall prepare

bill for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract, and less taxes due to be deducted at source as per applicable law and make payment accordingly.

51. Property

51.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor’s default.

52. Release from performance

52.1 If the Contract is frustrated by any event entirely outside the control of either the Employer or the Contractor the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made

F. Special Conditions of Contract

1. Labour :

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Employer, deliver to the Employer a return in detail, in such form and at such intervals as the Employer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Employer may require.

2. Compliance with labour regulations :

During continuance of the contract, the Contractor and his sub contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government

or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, Employer shall have the right to deduct any money due to the Contractor including his amount of security deposit. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

3. Protection of Environment:

The contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

4. Arbitration (Clause 24)

4.1 The procedure for arbitration shall be as follows:

(a) In case of dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement it shall be settled in accordance with the Arbitration and Conciliation Act 1996. The disputes or differences shall be referred to a Sole Arbitrator. The Sole Arbitrator shall be appointed by agreement between the parties; failing such agreement, by the Appointing Authority (any one of the Organizations as per list enclosed in Annexure)

(b) Arbitration proceedings shall be held at ***Bangalore***, Karnataka, India

(c) The cost and expenses of arbitration proceedings will be paid as determined by the Arbitrator. However the expenses incurred by each party in connection with the preparation, presentation, etc., shall be borne by each party itself.

(d) Performance under the contract shall continue during the arbitration proceedings and payments due the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

5 Contractor to Co-ordinate his Work with Other Contractors

5.1 The Contractor has to co-ordinate with the other concerned Contractors as already specified in Conditions of Contract for all such works as per the directions of Engineer in charge at no extra cost.

6 **Safety Precautions:**

a. At the work spot proper barricades should be provided by the Contractor and the barricades are to be painted or stuck on with road luminous paint strip at suitable intervals.

b. The Contractor shall be fully responsible against loss or damage arising from working machinery adjacent to the working spot (main road) and for any loss or damage to the existing main road.

c. The Contractor shall be fully responsible for ensuring safety at all times and shall bear the cost of all damages in cases of accidents unusual occurrences resulting in damage to the property and other things around the work spot.

d. The Contractor should have sufficient Oxygen cylinders at the work spot for safety measures.

10. The Contractor should have necessary plants and equipment's such as high capacity jacks etc and the list of such plant and equipment proposed to be utilized for the work.

11. The Contractor should carry out the said work as per the standard measures of trenchless technology, if required.

12. The rates of Schedule-B of respective items will be revised as per the Govt. orders vide No.D.¸ÀA.:¯ÉÆÃ.E-51 DgïrJ¥sï 2019.¨ÉAUÀ¼ÀÆgÀÄ ¢£ÁAPÀ 25.03.2022, ¸ÀA.D.¸ÀA.£À.C.E 08/LJ£ïL2021 (E-PÀbÉÃj), ¨ÉAUÀ¼ÀÆgÀÄ ¢ £ÁAPÀ 04.12.2021 ºÁUÀÆ SÁAiÀÄA ¤gÀvÀ KPÀgÀÆ¥À zÀgÀ¥ÀnÖ vÀAiÀiÁjPÁ ¸À«ÄwAiÀÄ £ÀqÀªÀ½AiÀÄ£ÀÄ¸ÁgÀ.

Annexure:

LIST OF ORGANIZATIONS WHO ARE CONSIDERED AS APPOINTING AUTHORITY FOR APPOINTMENT OF ARBITRATORS[32]

1. Indian Council of Arbitration, New Delhi;
2. International Centre for Alternative Disputes Resolution (India);
3. Indian Roads Congress;
4. Indian Building Congress;
5. Indian Institute of Bridge Engineers;
6. Indian Institute of Public Health Engineers;
7. Institute of Water Works

[32] Add any other Organization considered suitable.

SECTION 6: CONTRACT DATA

Items marked "N/A" do not apply in this Contract.

Items marked "N/A" do not apply in this Contract.
The following documents are also part of the Contract: Clause Reference

- The Schedule of Operating and Maintenance Manuals [48]
- The Methodology and Program of Construction [25]
- Site Investigation Reports [14]
- The Schedule of Key and Critical Equipment to be deployed on the work as per agreed program of construction. [25]

The Employer is :
Name: EIC***, BWSSB.*** [1.1]

Address: 2nd ***Floor, Cauvery Bhavan,***
Kempegowda Road,
Bangalore 560 009
Ph: 080-22945101

Name of authorized Representative: Executive Engineer, (UFW)-2,
Suvarna bhavana, Malleshwaram,
Bangalore.

The name of the Contract and identification number of the contract is: "Tender for the work of Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations coming under AEE (UFW)-2 subdivision -3rd Call

The Works consist of: Supply, installation & commissioning of 100mm & 150mm dia Bulk Flow meters in various locations.

The start date shall be the date of issue of notice to proceed with the work

The Intended Completion Date for the whole of the Works is 6 Months

The following documents also form part of the Contract:

The Site Possession Date is: 15 days from date of issue of notice to proceed with the work.
The Site is located at: Various location of Bangalore.

Payment - Terms.

The employer will make the payment to the items on the following terms-(Clause 43 GCC)

S. No.	Milestones	% of the Price
1	Upon Supply of Electro Magnetic Bulk Flow Meters at t each location.	50% of agreed price
2	Upon Installation, successful Testing and Commissioning of Electro Magnetic Bulk flow meters and synchronizing readings from all bulk flow meters to available central server.	45% of agreed price
34	Upon successful completion of 1 year Defect Liability Period.	5 % of agreed price (else BG of the same shall be submiited)
	Total	**100**

Insurance shall be provided for all the Bulk Flow meters

The Defects Liability Period is 365 days

The liquidated damages for the whole of the works are Rs.0.1% per days/delay

The maximum amount of liquidated damages for the whole of the work is ten percent of final contract price.

The following events shall also be fundamental breach of the contract:

1. The contractor has contravened Sub-clause 7.1 and Clause 9 of CC.

The percentage to apply to the value of the work not completed representing the
Employer's additional cost for completing the works shall be 30 percent.

Price Adjustment – Not applicalbe

Insurance requirements are as under:

[13]

Type of Cover		Rs. ..... lakhs
(i)	Works and of Plant and materials	The sum stated in the Agreement plus 20%
(ii)	Loss or damage to equipment	Full replacement cost
(iii)	Loss or damage to property of Third Party	Full replacement cost
(iv)	Personal injury or death insurance (a) for Third Party	Rs. _____ Lakhs

	(b) for Contractor's employees or labour	In accordance with the statutory requirements applicable to Karnataka

SECTION 7: **TECHNICAL SPECIFICATIONS**

GENERAL MECHANICAL, ELECTRICAL & INSTRUMENTATION WORKS

6.A.1 Applicable Codes and Specifications

The following codes and standards are included in this section.

IS:2060 - Specification for MS plate/HR coil to Manufacture MS pipes
IP 68 - Meter protection
Hard Rubber/EPDM/NBR - flow meter liner material with WRAS approval for domestic drinking water purpose
MS/CS/SS with corrosion resistant coating with min Corrosivity category of C4 - The coil housing
SS316/Hastelloy C - The electrode material
Data logger - logging data as daily, weekly, or monthly basis
ISI 865GR5001B5970-431 5- 29 - Specification for cast iron butterfly valve/ sluice valve
IS :14846 : Speciation for dimensions of valves, bolts and nuts, hand wheels
BS 5150 and IS 780. Specification for Size of valves and pressure rating test certificates for
Materials, strength and leakage
IS 3589-2001 **:** Specification for MS pipe
ISS 1554 : specification for Cable suitable for 3 phase, 50 Hz
ISS 1554 : speciation for routine test of the standard conductor PVC armoured cable
IE Rule : for earthing of transformer yard and pump house
IS 2713 – 7 : The tabular pole shall be erected in the cement concrete work (shall be erected in the cement concrete work 1:2:4) including excavation and refilling of planting depth of the pole to the ground level and the coping CC shall be upto 0.6mt above ground level

ISO 7005, IS 6392 or BS 4504 - .Specification for Flanges shall be machined faces and edges with PN 1.6 rating

IS 5660. : Specification for all exposed machined ferrous surfaces shall be painted with one coat of aluminum red oxide primer

IS 341 – Type-B : Specification for Two coats of black Japan paint

IS 9862 or IS 2932 : specification for paints

IS 210 Gr FG 200/IS 1030 - Specification for sluice valve material construction of Body and gate shall be Grey cast Iron / CS

BS 970 Gr 431 S29./IS 1030 Specification for sluice valve material construction of Spindle shall be: Stainless steel /CS

ASTMA 743 CF8 or Alloy SteelS3444 - Specification for sluice valve material construction of Seat Rings shall be Stainless steel

IS 318 Gr LTB2 - Specification for sluice valve material construction of Back seat Bush shall be Bronze

IS 14846 - Specification for By pass arrangements of Sluice valve

Fire Protection - As per IE rules

IS: 7322-1985 - Specification for MS Dismantling Joint, Bends , Flanged pipes and MS pipes of manufacturing, providing , transportation etc.,

IS: 3589- 2001 - Specification for Hydraulic test , pressure test, working Pressure both at factory and site for MS specials

IS: 9103-1999 - Specification for concrete add mixtures

I GENERAL

1.1 Scope of Work.

The scope of work under this Contract includes the following:

1.1.1 Providing & Laying of respective / required water supply pipe along with specials.

1.12 Manufacturing, Providing, transporting, testing, laying & commissioning of required / respective water supply pipe line with allied works.

1.1.3 Earthwork in all kinds of soil, hard rock. The pipeline is to be laid in the developed city roads with traffic

1.1.4 Fixing and connecting all pipelines fixtures like valves, bends, tees and other specials as specified in the construction drawings, construction all appurtenant structures such as pipe supports, valve chambers, thrust blocks, etc.,

1.1.5 Backfilling the trenches, restoring and making good all surfaces which are damaged during excavation.

1.1.6 Dismantling and reconstruction of structures such as culverts, storm water drains, roads etc., and utility lines such as water supply pipe lines, sewer lines coming in the way of the pipeline alignment.

1.1.7 Testing and commissioning of the pipe line after laying.

1.1.8 Maintenance of all the pipelines for 12 months after commissioning. During this period, the contractor has to set right the defect of any kind in the manufacture, laying and jointing of all the pipelines and in the other works in this scope of tender.

1.1.9 All work shall be done as per the specifications. The works shall include providing all materials, equipments, labour, tools, plants, transport etc., and all other services necessary for the complete construction including necessary sub-soil investigations.

1.20 The alignment of the pipeline and other typical details of pipe bedding, valve chambers, thrust blocks, pipe supports, and the general arrangement of reservoir are furnished in Drawings. Further details shall be furnished in the construction drawings during the construction stage if found necessary.

1.2 Royalties

1.2.1 The Employer shall deduct Royalties on materials used in the Works from the progress payments to the Contractor at the rates specified in the most recent “Amendment to the Karnataka Minor Minerals Concession Rules - 1969” as published by the Commerce and Industries Department (Mines) and as illustrated in Annexure-1, attached.

1.3 Site Order Book

1.3.1 The Contractor shall maintain an identical pair of Site Order Books (one marked original and the other marked duplicate), at the Site at all times during the execution of the Works for the use of the Engineer and the Contractor. All instructions issued by the Engineer to the Contractor shall be recorded in both sets of the Site Order Book and shall be signed by the issuer and countersigned by the Contractor. After compliance with the instruction, the Contractor shall record the same in both sets of the Site Order Book duly signed and countersigned by the Engineer. Acceptance of any part of the work executed by the Contractor shall be subject to verification with respect to compliance of respective instructions of the Engineer through the Site Order Book. The Engineer shall retain the original copy of the Site Order Book, while the Contractor shall retain the duplicate one.

1.4 Quarry Materials

1.4.1 The Contractor shall be wholly responsible to identify the suitable sources for quarry materials required for the Works, such as earth, sand, stone, muram,

etc., and to make his own arrangements for collection and transportation of the materials irrespective of the leads and lifts required. The quarry thus identified by the Contractor should have proper license from the Government of Karnataka. All materials supplied by the Contractor shall satisfy the requirements set forth in the Specifications and shall be subject to the approval of the Engineer. The Contractor shall take this into account while offering his rates and no claims whatsoever shall be entertained for extra costs on this account.

1.5 Inspection and testing

1.5.1 Inspection of Material to be procured

Inspection and certification of all materials used on the works such as MS Plates / Pipes and Specials , Valves, Cement, Size Stones, Sand aggregate, Lead, Rubber gaskets etc., for conformity with specifications of BIS. If insisted, inspection of materials at the manufacture place shall be arranged by the contractor at his cost including the travelling and accommodation of the inspecting officer.

1.5.2 **Inspection and certification of the various components of works.**

Construction of pipeline with all fixtures, construction of Valve Chamber including back filling of trench in layers with compaction as specified to ensure that all components of works are carried out as per specification and to required standards.

Inspection & Certification of Hydraulic Test on Completed pipe line in reaches as specified.

1.6 Technical Specifications

1.6.1 Engineer shall have the right to modify/alter the Particular Specifications and/or Standard Specifications at any time which promise to confer equal or better quality than the standard specified in the tender document. Such modification or alteration shall be acceptable to the Contractor subject to no additional financial burden to either the Contractor or the Employer.

1.7 Storage of Materials and Plant

1.7.1 The Contractor shall provide appropriate storage facilities for materials like cement, steel, aggregates, consumable supplies, equipment, mechanical and electrical items, etc., and shall take all safety and security measures against theft and deterioration in quality, at his own cost.

1.8 Procurement of Materials:

1.8.1 CEMENT:

The Contractor shall use only 43 grade cement conforming to IS 8112 / 89 with latest amendments with ISI mark. The Contractor should furnish the manufacturer test certificate for the above brand of cement for having manufactured the cement as per relevant BIS and guarantee certificate before using the cement.

1.8.2 STEEL:

The Contractor shall procure the steel from VISL / SAIL / VSP / TISCO and manufacturers' test certificate is to be produced.

1.8.3. MS PIPES, AND OTHERS

Sl.No.	Description	Make
	Sluice Valves Conforming to IS 14846/2000	KIRLOSKAR, IVI, FOURESS, DURGA, JASH, JUPITER, BSJ, SHAU, UPADYAYA, CALSEN
	Butterfly valves – Conforming to IS 13095 / 1991	KIRLOSKAR, FOURESS, IVI, DURGA , L & T, JASH
	MS plate/HR coil to Manufacture MS pipes Conforming to IS: 2062	SAIL, TISCO,ESSAR STEEL, ISPAT Industries,
	Kinetic Air Valves	KIRLOSKAR, IVI, BSJ, SHAU, DURGA, CALSEN,
	Double Ball Kinetic Air Valves	KIRLOSKAR, IVI, BSJ, SHAU, DURGA
	Bolts, Nuts and Washers	GKW, TEXSO MAKE, T.V.S. UNBRAKO

(Any other reputed make as may be approved by BWSSB at a later date by producing the credentials.)

The above branded makes are preferred. In the bid the bidder should specify the make for which the rate is quoted without which the Board can specify any make among the above brands

1.9 Equivalency of Standards and be procured, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be acceptable subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 28 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

1.10 Sign Board

1.10.1 The Contractor shall provide a sign board at the site of the Works of approved size and design which provides (i) the name of the Project (ii) the names and addresses of the Employer, the Contractor and the Consultant; (iii) the name and

short description of the Project, (iv) the amount of the Contract Price ; and (v) the starting and completion dates.

1.11 Samples and Tests

1.11.1 The Contractor shall be responsible to develop a quality control program and to provide all necessary materials, apparatus, instruments, equipment, facilities and qualified staff for sampling, testing and quality control of the materials and the works under the Contract. Without limiting the generality of the foregoing, the Contractor shall either (i) establish a testing laboratory at the site of Works which is adequately equipped and staffed to carry out all sampling and testing in accordance with the requirement set out in the General Specifications and/or these Special Specifications and provide all field equipment and apparatus as necessary to conduct all specified in-situ tests and/or any Tests on Completion, provided the correctness of the equipments are ensured or (ii) arrange for routine sampling, testing and reporting, as required, through a certified independent testing laboratory acceptable to the Engineer. All costs of such sampling, testing and reporting of test results will be borne by the Contractor, and the Contractor shall include sufficient provisions in his tendered rates to allow for independent sampling and laboratory testing under the direction of the Engineer up to 5% of the required tests at no additional cost. The Contractor shall furnish certified copies of all test reports to the Engineer within 3 days of completion of the specified tests.

1.11.2 The Contractor shall, within 14 days after the date of the Letter of Acceptance, submit to the Engineer for his consent a detailed description of the arrangements for conducting the quality control programme during execution of the Works, including details of his testing laboratory, equipment, staff and general procedures. If following submission, or at any time during the progress of Works, it appears to the Engineer that the Contractor’s quality control programme is not adequate to ensure the quality of the Works, the Contractor shall produce a revised programme which will be adequate to ensure satisfactory quality control.

1.12 Protection of Utilities

1.12.1 The Contractor is required to carefully examine the location of the Works and their alignments and to make special enquiries with all authorities concerning all utility lines such as water, sewers, gas pipe, telephone (underground and/or overhead) lines, electric cable (underground and/or overhead) lines, etc.; and to determine and verify to his own satisfaction the character, sizes, position and lengths of such utilities from authentic records. The Contractor shall be wholly responsible for the protection and/or facilitating relocation of such utilities as may be required, and shall not make any claim for extra work or extra time that may be required to protect or facilitate relocating such utilities. If any major shifting or realignment of water, sewers, gas pipes, electric and telephone lines is necessary due to their interference with the proposed Works, the same may be done by the Employer. The cost of such relocation will be borne by the Employer. In case the alignment of the pipeline crosses high tension electrical transmission lines belonging to the Karnataka Power Transmission Corporation Ltd. (KPTCL) or other authorities, the Contractor shall take all precautions necessary to see that the work is carried out with care and safety, without disturbing such transmission lines. The Contractor will be responsible to carry out all construction activities in such reaches in consultation with the owners of

such facilities. However, satisfactory completion of the entire work will be the responsibility of the Contractor.

II EARTH WORK:

2.1 GENERAL:

2.1.1 The earth work excavation for laying of pipe shall be carried out. The Contractor shall make all excavations required for laying and jointing of the pipeline and construction of pertinent structures as required in the project. Except where otherwise required by the project or instructed by the Engineer, all excavation shall be in open cut to the specified widths and depths. The Contractor is advised to satisfy himself with regard to the likely conditions that may be met with during the execution of the Works, with regard to the underground obstructions or conditions, necessary dewatering requirements etc. Before commencing the earth work, the Contractor shall carry out detailed survey of the proposed alignment, prepare construction drawings showing the longitudinal section of the ground profile, locations of valves and other appurtenances and submit to the Employer for approval.

2.2 CLASSIFICATION OF EXCAVATION

All materials involved in excavation shall be classified in three categories as follows:

2.2.1 **Ordinary soil:** This includes excavation in all types of soil including soil containing gravels, murums, loose boulders, viz., ordinary gravely soil, hard gravely soil, wet soil, stiff slushy soil, chettu soil and calcareous strata, but exclusive of disintegrated rock, soft rock/shale;

2.2.2 **Soil Containing Disintegrated Rock, Soft Rock and Soft Shale:** This category includes excavation in soil containing disintegrated rock, soft rock or soft shale which can be cut by shovel and no hand or mechanical chiseling is required.

2.2.3 **Medium Hard Rock:** This category includes excavation in lime stone, sand stone, hard shale and schist fissured rock, without resorting to blasting.

2.2.4 **Hard Rock:** This category includes excavation in hard rock requiring hand or mechanical chiseling or blasting. In case of difference in opinion between the classification of rock requiring blasting and that requiring chiseling, wedging, the site of work shall be inspected by the engineer and the decision of the Engineer shall be final and binding on the Contractor.

2.3 LIMITATION OF EXCAVATION

2.3.1 The trench for laying MS Spiral welded pipes shall have minimum width as per standards stipulated or as directed by the Engineer-in-charge. A minimum earth cover of 1.2 m shall be maintained above the pipe top, unless otherwise specified or shown in the alignment drawings.

2.3.2 The Contractor shall be responsible to ensure that the widths and depths of the trenches do not exceed the limits shown in the construction drawings. Should the excavation occur beyond the dimensions specified therein, because of the negligence of the Contractor, the Contractor shall fill the excess space with

granular material or concrete as directed by the Engineer. Nothing extra shall be paid to the Contractor on account of this.

2.4 TRAIL PITS

2.4.1 Trial pits may be dug by the Contractor, without being directed to do so, along the alignment as shown on the drawings in advance of the excavations for the purpose of satisfying himself as to the location of under ground obstructions or soil conditions.

2.5 SLIPS AND SLIDES

2.5.1 The Contractor is responsible for proper protection of excavations made by him from any slips and slides. All slides and caving shall be handled, removed or corrected by the Contractor without any extra compensation at whatever time and under whatever circumstances they may occur. The excavations shall be made good and brought to necessary depth, width and levels without any extra cost.

2.6 STCKING OF EXCAVATED MATERIALS

2.6.1 The excavated material shall be stacked on the sides of the trench wherever possible. Wherever it is not possible to stock on the sides of the trench, contractor has to find the place nearby for stocking the excavated material and cart the materials to & fro. Rate for this shall be included in the earthwork itself and no extra rate will be paid for this.

2.6.2 Surplus earth is to be disposed off to a place identified by the contractor approved by the engineer. There is a item for this work and will be paid accordingly.

2.7 Safety measures

The Contractor shall provide adequate safety measures during excavation. They shall include:

1. Barricading all sides of the open trenches.
2. Red danger lights which can be easily visible from dusk to dawn placed at an interval of 20 m.
3. Traffic signals and display boards giving direction for diversion of traffic at the appropriate places as may be directed by the Engineer.
4. Adequate safe wooden plank / board or steel plate over the trenches to facilitate crossing by the public residing on either side of the trench.
5. Round the clock watch and ward maintaining all safety regulations at the site of work and protecting the site from unauthorised intrusions.

2.8 Progress of Excavation of pipe trenches

The Contractor shall adjust excavation of trenches in such lengths that the pipes can be laid in such exposed portion of the trench within 2 days.

2.9 Shoring and Bracing

The Contractor shall supply, fix and maintain necessary sheathing, shoring and bracing etc., in steel or wood, as may be required to support the sides of the excavation, to protect workmen in the trench and to prevent any trench movement which might any way injure or delay the work, change the required width of the trench, make unsafe condition for adjacent pavements, utilities, buildings or other structures above or below ground.

Sheathing, shoring and bracing shall be withdrawn and removed as the backfilling is being done, except when the Engineer may agree that such sheathing, shoring and bracing be left in place, at the Contractor's request. In any case, the Contractor shall cut off any such sheathing at least 600 mm below the surface and shall remove the cut off material from the trench.

All sheathing, shoring and bracing which are left in place under the foregoing provisions shall be removed in a manner so as to not endanger the completed work or other structures, utilities or property, whether public or private.

2.10 EXCAVATION

2.10.1 Excavation in Rock

Excavation in rock shall be carried out to a depth, 150 mm more than the bottom level of pipe and to a width equal to the diameter of the pipe plus minimum working space on either side as given in drawing. Unless otherwise directed by the Engineer, rock excavation shall be progressed at least by 50 m in advance of the pipe length proposed to be laid.

2.10.3 Excavation for Valve Chambers and Other Appurtenant Structures

The Contractor shall excavate as required for all structures with foundations to firm, undisturbed earth up to the level of the under side of the structure. If the excavation is in rock, the Contractor shall excavate all rock at least to the minimum limits shown on the standard details for trenches and to the grade of the bottom of inlets, junction chambers or other structures as required. Where the bottom of the structure is in rock, it should be ensured that no rock shall project above the lower surface of the concrete in such a manner so as to reduce the required thickness of concrete placed simultaneously as an integral part of the foundation and to the outside of structure foundation where structure is to be built. The Contractor shall excavate the trench / pit to provide necessary working space on all sides and for accommodating any sheathing, shoring or bracing etc.

2.11 Contractor's Responsibility

The Contractor shall be responsible for the adequate pumping, drainage and bailing out water from the excavated trench. In case of failure to make such provisions or any other provisions which may result in unsuitable sub-grade conditions, the Contractor shall replace and repair the sub-grade as directed to the satisfaction of the Engineer, at his own cost and responsibility.

Should the Contractor select to use a gravel sub-grade to facilitate flow of water to pumps or other points of disposal, such gravel sub-grade shall not be measured or paid for as an extra item.

2.12 Works Included in Excavation

The following works as per specifications are also included in excavation and the term 'Excavation' shall construe to mean all such items of work. The quoted rates should include the same:

1. Provision of side space or additional space in the trench/pit for working and/or accommodating sheathing, shoring, bracing, etc.
2. Supply, installation and removal after the work, all sheathing, shoring and bracing required to protect the excavation where required or where such work is recommended by the Engineer.
3. Protection of excavations.
4. Providing adequate safety measures.
5. Additional work in connection with overhead wires and poles.
6. Excavation for Socket hallows.
7. Supplying and fixing of sight rails and boning rods in the trench to facilitate measurement of work.

2.13 Measurement and Payment for Excavation

2.13.1 For Excavation

The measurement for excavation shall be considering the allowable widths, depths with allowed side slopes (if any) for different classes of soils as per approved classification. The measurement for excavation shall be based on "neat line" dimensions as specified in the drawing or Specifications, for different types of soils and depth of excavation. The total volume of excavation shall be computed as a square bottomed trench of width equal to the outer diameter of the pipe, with minimum working space as given in the drawing, added to it, length up to the length of the trench being measured. The depth of trench being average depth taken at 30 m intervals, between the level of bottom of trench and the original surface of the ground. The length of the trench shall be measured as per the actual length of pipes and fittings / specials laid at work site. However depth shall be measured at closure intervals at vulnerable places. The volume of excavation for structures like valve chambers, thrust blocks and anchor blocks etc., shall be computed and measured for payment as per the bottom area of the particular structure on outer periphery multiplied by the average depth between the level of the finished bottom of the structure and the original surface of the ground. The quantity shall be measured in cubic meters correct to two decimal places. The method of measurement for excavation in different classes of soils shall be as follows:

2.13.2 In Ordinary Soil and Soil Mixed with Disintegrated Rock and Soft Rock / Shale

In this category of soils, the excavation quantity shall be computed as specified above.

2.13.3 In Hard rock

In case of hard rock requiring chipping or chiseling, measurements shall be taken prior to and after chiseling and the volume of rock excavation shall be measured based on this difference. The excavation in rock shall be paid on stack measurements with a deduction of 40% in volume for voids.

2.13.4 For Excavation in Combination of Ordinary Soil, Disintegrated Rock, Soft Rock/Shale and Hard Rock/Schist

Wherever the excavation is undertaken in combination of ordinary soil, disintegrated rock, soft rock /shale and hard rock, the hard rock part shall be measured and paid, the soil part shall be measured and paid for the total measurable excavated quantity deducting the quantity measured for the hard rock. The total computed volume of excavation shall be equal to the sum of the computed volumes for each category of excavation undertaken.

2.14 Protection of Utilities

The Contractor is required to carefully examine the location of the Works and their alignments and to make special enquiries with all authorities concerning all utility lines such as water, sewers, gas pipe, telephone (underground and/or overhead) lines, electric cable (underground and/or overhead) lines, etc.; and to determine and verify to his own satisfaction the character, sizes, position and lengths of such utilities from authentic records. The Contractor shall be wholly responsible for the protection and/or facilitating relocation of such utilities as may be required, and shall not make any claim for extra work or extra time that may be required to protect or facilitate relocating such utilities. If any major shifting or realignment of water, sewers, gas pipes, electric and telephone lines is necessary due to their interference with the proposed Works, the same may be done by the Employer. The cost of such relocation will be borne by the Employer.

In case the alignment of the pipeline crosses high tension electrical transmission lines belonging to the Karnataka Power Transmission Corporation Ltd. (KPTCL) or other authorities, the Contractor shall take all precautions necessary to see that the work is carried out with care and safety, without disturbing such transmission lines. The Contractor will be responsible to carry out all construction activities in such reaches in consultation with the owners of such facilities. However, satisfactory completion of the entire work will be the responsibility of the Contractor.

III. BEDDING.

3.1. Bedding for the pipe

Bedding shall be provided all along the stretch of the pipe line, which differs based on the area through which the pipe line passes. However, the type of bedding to be provided shall be as decided by the Engineer.

3.2 Earth Bedding

The pipes shall be placed on the natural, undisturbed earth bedding, which has been carefully shaped to fit the lower part of the pipe for a width of at least 50

% of its external diameter. The trench shall be excavated to an extra breadth and depth, wherever weld joints are coming. Filling and removing earth or similar materials beneath the pipe to adjust with the grade will not be permitted except filling with compacted granular bedding material or murrum.

3.3 Gravel Bedding

Wherever rock is met with, it shall be removed up to 150 mm below the bottom level of the pipe to a minimum width equal to the width of the trench and the resulting space shall be filled up with good quality compacted gravel. The granular material shall be filled in the trench up to the level of ¼ the outer diameter of the pipe line, above the bottom of trench and well compacted. Unless otherwise directed by the Engineer, rock excavation shall progress at least 20 m in advance of the pipe length proposed to be laid.

3.4 Measurement for bedding:

The Contractor shall include the cost of earth bedding required for the pipeline in the tendered rate for pipe laying, for providing gravel bedding. The surplus quantity of excavated earth shall be disposed off. The quantity shall be measured in cubic meter correct to two decimal points.

IV BACK FILLING

4.1 General

The Contractor shall use selected surplus spoils from excavated materials for backfilling. All fill material shall be subject to Engineer's approval. The excavated materials suitable for backfilling shall be stored not closer than 600 mm from the edge of the trench and shall not obstruct any public utilities or interfere with travel by local inhabitants or general public. Handling and storage of excavated materials must meet with the regulations of the Local Government Authorities. The detailed specifications for backfilling shall be as per Clause 8 of IS: 3114-1994 and Clause 4.11 of IS 12288-1987.

4.2 Method of Backfilling

Trenches and excavated pits for structures shall be backfilled to original ground level or to such other levels, as the Engineer may direct. All backfilling shall be carried out in orderly manner expeditiously and consistent with good workmanship.

4.2.1 Backfill material put into the trenches/pits for backfilling, shall unless otherwise specified be compacted and built up as to minimise future settlement as much as is reasonably possible. For this, care shall be exercised in selecting backfill material free from large hard clay lumps, especially in cramped areas directly adjoining the walls of structures.

4.2.2 Backfilling in trenches shall be done as pipe laying progresses, with the permission of the Engineer, after the pipe or conduit is properly bedded, jointed and inspected and all measurements for the location of Y-Junctions, tees, etc., are properly recorded by the Engineer and sufficient time is allowed for the joint materials or cement concrete or mortar to set. However the joints shall be left open for inspection during testing, which shall be backfilled after

successful completion of testing, after obtaining permission from the Engineer. Backfilling around and over the pipe, conduit, or structure shall be taken up uniformly on all sides and in the sequence and manner specified hereinafter, with care to avoid the displacement or damage to the pipe, conduit or structure. For the purpose of backfilling, the depth of trench shall be divided into the following three zones measured from bottom to top of trench, as follows:

i. Zone A : From bottom of trench to the centre line of pipe,
ii. Zone B : From the level of centre line of pipe to a level of 300 mm above the top of pipe,
iii. Zone C : From a level of 300 mm above the top of pipe to the top of trench.

4.2.3 Backfilling in the trenches and around structures shall be carried out in horizontal layers of uniform thickness of not more than 150 mm when measured loose. As may be necessary to attain maximum compaction, the backfill material shall be moistened by sprinkling with water. After placing each layer of backfill material, the layer shall be thoroughly and uniformly compacted by means of mechanical or hand tampers. The compacting equipment and the manner of its use shall be subject to the approval of the Engineer.

4.2.4 After the backfill material is placed in Zone A and Zone B as specified above, the remaining portion i.e., Zone C of the trench may be machine backfilled. Even in this case the backfill material shall be placed in uniform horizontal layers of not more than 150 mm thickness. Small pebbles of size less than 50 mm, if any, shall be so distributed throughout the mass, that all interstices are solidly filled with fine material. The backfill material shall be tamped with mechanical tamping equipment, after moistening the backfill by sprinkling with water to obtain maximum compaction (min 95% proctor density).

4.2.5 Machine backfill shall be so conducted that the material deposited in the trench shall not fall directly on top of the pipe from such a height as might result in damage to the pipe joints or alignment.

4.2.6 If the trench is subjected to conditions which might cause flotation of the pipe before sufficient backfill has been placed, the Contractor shall take the necessary precautions to prevent floatation of the pipe, conduit or structure.

4.2.7 Before final acceptance of the work, additional tamped earth shall be added to restore the settled trench surface to the required level of the adjacent earth surface or to the base of crushed rock wearing surface or to the finished earth base.

4.2.8 If from the excavated soil, enough backfill material is not available, imported, selected and approved backfill material from the borrow pits is required to be placed for backfill, on approval of the Engineer backfilling of trenches where the excavation is in the rock shall be with the surplus soft soil, with all lead and lift.

4.3 Disposal of Surplus Excavated Material

The excavated material which is in surplus to the requirements after backfilling shall be removed and spread at places shown by the Engineer, with all lead and lift from the site of work, for which payment shall be made as per the quoted rates. No

surplus or excess material shall be disposed in a stream / channel or in any place where the pre-construction surface drainage may have to be provided, without written permission of the Engineer.

Specials

Specials shall be fabricated to the dimensions shown on drawings. Specials, such as tees, Y-pieces, bends, tapers, etc. shall necessarily be in steel and shall be in accordance with IS 7322/BS 534/AWWA C208 and ASME standards and tested and laid in the same manner as the pipes.

Standard fittings shall be used wherever possible in preference to fabricated fittings. Standard fittings shall be manufactured in accordance with standards above. Where fabricated fittings are supplied with approval of Engineers they shall be fully workshop fabricated and tested in accordance with above standards.

Tee and branches on steel pipelines must be reinforced by welding collars around the base of the branch and in the case of large diameter branches, increasing the main pipe wall thickness or making use of crotch plates. Unless shown otherwise on the drawings branches shall comply with the requirement of the following table:

Fitting Description Pipe work O.D. (mm)	Main Pipe wall Thickness (mm)	Branch Pipe Wall Thickness (mm)	Collar Details (mm)
324 off 1320 324 off 1320 324 off 1999-Level Invert Tee 324 off 1647 324 off 1241	10 14/12 14/12 11/12 8/10	5.0 5.0 5.0 5.0 5.0	150 Wide x 14 to 25 Thick 150 Wide x 14 to 25 Thick 150 Wide x 14 to 25 Thick 150 Wide x 14 to 25 Thick 150 Wide x 14 to 25 Thick

The fittings shall be designed and, if considered necessary by the Engineer, fabricated by a specialist contractor and the design calculations and drawings shall be submitted to the Engineer for approval. For oval shaped collars the width given in the above table shall be at the narrowest point. All other fittings, tees, branches, crosses and bends are to be designed by the fabricator.

Steel specials shall have the same chemical and mechanical properties and shall be compatible in all respects with the pipes with which they are to be used. The marking of pipes and fittings shall be as specified.

Executive

Engineer

(UFW)-2

Division

TECHINCAL SPECFICATION OF BULK FLOW METERS

7.1.1 Introduction

The flow measurement system for bulk flow measurement to be used under this contract shall be electromagnetic type meters with GPRS/GSM. Each water meter intended for a potable water supply. It shall comprise two principal components, as follows:

- A flow sensor of the electromagnetic type, which shall be suitable for installation in a buried water main. The sensor shall be connected to the main by means of PN16 flanged connections. The meter shall be suitable for installation in a flooded chamber and for being directly buried.

- An electronic display unit. This shall be installed in an above ground cabinet enclosure in a convenient location, as close as possible to the water meter.

- The meters proposed should have mandatory provision for the external power supply of 12-24 V DC/AC as well as a battery which shall be integral to the Electronic Display Unit/ Transmitter unit. The power backup through the external battery and by any external UPS **shall not be allowed**.

On a minimum, water meter shall be provided with the following facilities at the electronic display unit:

- integral real-time clock for date and time recording of flow data
- integral data logger for storing data for a minimum of 31 days.
- Serial or suitable communication port to enable data to be passed from the display Unitto display flow and pressure details.
- a second serial or suitable communication port for the temporary connection of a

laptop /computer

- Input/output block for connecting GPRS transmitter for the transfer of all display /error codes and status functions from the electronic display unit to central SCADA system, through GPRS communication.
- Meters should be commissioned upon installation of each meter so as All data from the meter can be transferred to the central SCADA System as specified by BWSSB.. PSION and Laptop, leads and appropriate software and software licenses shall be provided to facilitate configuration of the water meters and for down-loading the integral data logger for data analysis.

7.2 General Specifications for Electro Magnetic Flow Meters

a) Full bore electromagnetic flow meter shall consist of flow sensor (i.e. flow tube), flow transmitter and flow indicator and integrator and any other item required to complete the system. To avoid the effects of disturbances in the velocity profile, a straight and uninterrupted run, upstream as well as downstream from the location of the flow meter shall be provided, as required by the flow meter manufacturer and in line with the applicable standards. Contractor shall finalize the exact location of flow meter in consultation with Engineer.

b) Flow measurement shall not be affected by physical properties of water viz., temperature, pressure etc., within given limits. Contractor shall provide compensating electronic circuits, if required.

c) A lockable enclosure shall be provided for the flow transmitter cum computing unit.

d) Flow meters shall be suitable for the water turbidity at site during various seasons. Flow tube shall be rugged in construction and shall be suitable for continuous operation. Flow tube shall have waterproof construction and shall be suitable for installation on underground /above ground pipe lines.

e). The flow computer and transmitter shall be a single unit suitable for field mounting. It shall accept inputs from flow tube process the signals and shall provide an output proportional to the flow rate. The output shall be 4-20 mA.

a) Particular Specifications:		
1.	Accuracy of flow measurement during FAT	± 0.4% of measured value
2.	Overall accuracy of flow measurement loop.	± 1.0 % of measured value
b)	**Flow tube**	

a) Particular Specifications:			
(i)	Application	:	Water applications
(ii)	Type	:	In line, full bore electromagnetic
(iii)	Size of flow tube	:	To suit mains flow parameters, with pipe reducers provided as necessary
(iv)	Process connection	:	Flanged
(v)	Weather Protection Class	:	IP 68 as per IS 13947
(vii)	Material of Construction:		
	Electrodes	:	Hastelloy C276
	Coil Housing	:	non-corrosive
	Flanges	:	Carbon steel
	Grounding ring	:	Hastelloy C276
(viii)	Flow tube Lining	:	*EPDM*
c)	**Flow Transmitter Unit**		
(i)	Type	:	Microprocessor based with facility to configure the ranges.
(ii)	Type of display	:	4 digit backlit LCD / LCD, for flow rate in m3/hr. 8 digit backlit LCD / LCD for totalized flow in ML • Display with 8 digits for main information. Index, menu and status symbols for dedicated information • Key for toggling through the information and reset customer totalizer and call-up function • Selectable default information and accessible menus: - Operator - Meter - Service - Data Logger
(iii)	Units of display	:	• Volume: m3 x 100, l x 100,G x 100, G x 1000, MG,CF x 100, CF x 1000, AF, Al, kl • Flow: m3/min, m3/d, l/s, l/min, GPS, GPH, GPD, MGD, CFS,CFM, CFH
(iv)	Input	:	From flow tube

a) Particular Specifications:			
(v)	Output	:	4-20 mA DC (isolated) proportional to flow rate
(vi)	Power Supply	:	The meters proposed should have mandatory provision for the external power supply of 12-24 V DC/AC as well as a battery which shall be integral to the Electronic Display Unit/ Transmitter unit. The power backup through the external battery and by any external UPS shall not be allowed.
(vii)	Zero and Span Adjustment	:	Factory set Password protection of all parameters and hardware protection of calibration and revenue parameters.
(viii)	Weather Protection Class	:	IP 65 as per IS 13947, IP 67
(ix)	Battery backup for totalized flow Type Capacity Backup Time Data Protection:	:	Online 2.5 Mva Minimum 8 hours considering transfer of real time data to the central server, 2-way communication (minimum 10 polling intervals either way) with the central SCADA server established at BWSSB premises & totalized flow and other related data as required under this contract. • All data stored shall be stored in an EEPROM. Totalizers shall be backed up every 10 min, statistic every hour and power consumption and temperature Measurement every 4 hour. Minimum 31 days of data shall be stored in EEPROM. • Password protection of all parameters and hardware protection of calibration and revenue

a) Particular Specifications:		
		parameters.
(x)	On line diagnosis & program modification:	Required as following: Diagnostic • Continuous self-test shall include - Coil current to drive the magnetic field - Signal input circuit - Data calculation, handling and storing • Features - Alarm statistics and logging for fault analyzing - Electrode impedance to check actual media contact -Flow simulation to check pulse and communication signal chain for correct scaling - Number of sensor measurements (excitations) - Transmitter temperature (battery capacity calculation) - Low impedance alarm for change in media - Flow alarm when defined high flow exceeds - Verification mode for fast measure performance check - Statistic flow and consumption data - The meter shall be configured to accept the meter program modification from the central SCADA server via remote GPRS communication as and when required, transfer error codes to the server for fault analysis
(xi)	Wireless Communication Module	Redundant GPRS modem for Transmission of Process Flow & Totalized Flow data to SCADA system (Make of the Modem shall be of Approved Make List of Flow meters as per Clause No: -6.6)

7.2.1 The Flow Sensor

The sensor shall be suitable for being directly buried and shall have a degree of protection to IP 68 (NEMA6). The sensor shall have PN16 flanged end connections.

The sensor shall be suitable for an operating pressure of 16 bar gauge and a system test pressure of 25 bar gauge.

The metering tube shall be suitably lined to withstand abrasion of the fluid. The lining shall be EPDM and shall have been type-tested in an accredited laboratory and have been shown to be suitable for use in contact with potable water (UKWFBS listed).

The electrodes for sensing the voltage induced in the liquid shall be made of type Hastalloy C267.

The coil housing shall be fabricated from corrosion resistant material capable of submerged or buried operation.

The sensor shall be supplied complete with a factory-fitted umbilical cable for communication with the electronic display unit. The cable length shall be determined by the contractor for each meter location, but shall be not less than 20 metres long so that it can be cut on site to suit the selected location for the electronic display unit. The construction of the signal connectors and cable shall protect the water meter from electromagnetic interference and shall be suitable for buried use and outdoor installation. The cable shall be protected by a suitably robust polyethylene sleeve to prevent accidental damage.

The Contractor shall provide all sundry items such as grounding electrodes and/or grounding rings necessary for satisfactory operation of the sensor.

7.2.2 The Electronic Display Unit

The enclosure of the electronic display unit shall have a degree of protection to IP 65 or better.

The display unit shall have a configurable password protection for accessing the flow meter menu.

The unit shall have LCD displays to show the following parameters, as selected by the operator:

- Cumulative forward flow
- Cumulative reverse flow
- Cumulative net flow
- Instantaneous flow rate
- Instantaneous velocity
- Minimum night flow
- Peak day flow
- Pressure
- Date and time

The user shall be able to configure the electronic display unit to display:

- Cumulative flow in m^3
- Flow rate in m^3/h or l/s
- Velocity in m/s
- Pressure in m or kg/cm2

There shall also be status indicators for each of the following conditions:
- Battery low
- Fault
- Empty pipe

7.2.2 Calibration:

The Electromagnetic flow meter shall be calibrated for the full flow range specified as per BS EN 29104 (Methods of evaluation of electromagnetic flow meters). The calibration method shall be either gravimetric method as per ISO 4185 (Measurement of fluid flow in closed conduits – weighing method).

The 'test bed' shall be accredited by national /international certifying authority. The Contractor shall produce accreditation certificates for the test facility and manufacturer calibration certificate for each flow meter, for the review by Engineer. The Contractor shall also demonstrate complete calibration on the test bed in the flow meter laboratory during witnessing of meters as per Clause 6.9. The flow meter shall be acceptable if the accuracy and repeatability is equal to or better than those specified.

7.3 Submissions by the contractor:

Functional Design Specifications: -**UFW Instrumentation**

The Contractor shall submit a complete functional design specification (FDS) for approval by the Engineer within 1 months of the award of the contract. This document shall serve as the primary mechanism by which the Engineer may confirm that the Contractor possesses an accurate understanding of the system and its control requirements. The Contractor is encouraged to obtain clarifications and to suggest refinements to the control descriptions contained in this Specification.

The FDS shall comprise an overall description of the process, its functioning and control, and a detailed description of each section of the control system. The detailed description shall include a step-by-step control description which

defines the function of each piece of equipment and each control action and interlock.

The FDS shall describe the ‘fail-safe’ features incorporated into the design for the event of failure or loss of an input signal affecting a control loop or process sequence.

The FDS shall describe control actions taken and monitoring functions which remain available during a power failure/battery failure, and any automatic controls or sequencing which take place during system start-up and shut-down.

The FDS shall be presented in a clear and precise manner and shall include figures or drawings where appropriate.

The Contractor shall submit and obtain approval of the FDS from the Engineer before beginning the detailed control system design. The contractor should take note of the importance of this obligation.

In general, the submissions of the instrumentation system shall comprise the following as a minimum:

(a) The detailed technical data sheets shall be submitted for all online filed instruments to the Engineer for approval prior to the procurement.

A functional design specification (FDS) for system. This document shall serve as the primary mechanism by which the Engineer may confirm that the Contractor possesses an accurate understanding of the system and its requirements.

The FDS shall include a detailed block diagram of the system with description of the scheme to be provided.

The FDS shall include a description of the interface of Instrumentation system (Online Flow & Pressure) withcentral SCADA system of BWSSB.

The Contractor shall submit a preliminary FDS and obtain approval before the system architecture design is finalized or detailed design takes place. The Contractor shall formally notify the Engineer for approval of any amendments or additions to the approved FDS. The final FDS shall be submitted for approval before submission of the factory acceptance test definition documents. The Contractor should take note of the importance of this obligation.

(b) Layout drawings for each piece of equipment fabricated or assembled by the Contractor, showing the position of each component with required clearances where applicable, and with overall dimensions.

(c) Wiring diagrams indicating each component of the system and all wiring and cabling thereto, showing manufacturers, types, duties, ranges and nomenclature, with inputs, outputs, cable wiring and terminal identifications clearly marked.

(d) Complete input and output list giving type, circuit number, tag name, short description, outstation, database reference, associated field device, range (if applicable), critical/non-critical alarm status and the like.

(e) Description of quality control methods and approvals.

(f) Detailed works and factory acceptance test procedures.

(g) Program for manufacture, delivery, installation and commissioning.

(h) Appendices, as necessary, to include manufacturer's literature for each item of equipment supplied.

(i) Operation and maintenance manuals detailing the following:

a. General description and operating principles;

b. Technical description of the equipment (manufacturer's standard brochures only being acceptable if the particular item of equipment described is clearly designated, adequate information is supplied, and irrelevant information is deleted or otherwise delineated)

c. Complete operating instructions defining the sequence of operations, including flow charts;

d. Procedures for dismantling, cleaning, servicing, replacing parts and reassembling, including recommended clearances and tolerances;

e. Details of all instrument and equipment settings as applicable to this contract;

f. Maintenance and lubrication schedules;

g. Fault diagnosis procedures;

h. Dated and priced list of significant spare parts and special tools, including identification numbers and sources of supply;

i. Simplified arrangement drawings showing all components of the equipment.

(j) General operating manual comprising the following:

a. General description and operating principles;

b. Operating instructions for normal procedures in a step-by-step format including control operations, requirements for display or printing of data, performance monitoring, response to alarms or failures, changing of operational parameters, and manual data entry.

7.4. Factory Tests & Inspection

Each water meter shall be subjected to a hydrostatic test and shall be calibrated in the manufacturer's works prior to dispatch. Calibration and hydrostatic test certificates and QAP shall be provided before disptach.

7.5 Installation

(a) Flow Sensor and Electronic Display Unit

Every electromagnetic water meter shall be installed in accordance with the

manufacturer's instructions and recommendations. In particular, the sensor body shall be installed such that it is always full of water to ensure full bore meter operation at all times, even during periods of intermittent supply, and with the electrodes always submerged. This may be achieved by utilizing natural dips in the pipeline, re-laying existing pipes with deflections at joints to create the necessary installation conditions, or creating a low point for the sensor body. Pipe transition slopes shall be such as to ensure any debris suspended in the flow of water is carried through the meter without any deposition. Pipe reducers shall be used to minimize excavation depths and pipework modifications. A slab or plate shall be buried above the sensor to warn other contractors of its location beneath and to provide appropriate protection.

Wherever a water meter is to be installed in a water main with cathodic protection, insulating flanges shall be provided on both sides of the sensor and insulated copper straps shall be installed to provide electrical continuity between the pipes on each side of the sensor.

The electronic display unit shall be installed on a removable backboard in a vandal-resistant weatherproof IP65 floor, wall or post mounting cabinet enclosure. The enclosure shall be constructed from galvanised steel which is at least 3 mm thick. The enclosure shall have a hinged access door, which shall have a facility for padlocking in the closed position. Batteries shall be easily accessible for periodic changing. For floor mounting enclosures, the enclosure shall be mounted on a concrete plinth, the surface of which shall be at least 150 mm above the surrounding finished ground level. A cable duct shall pass through the plinth to enable the cable from the flow sensor to enter the enclosure. A label showing details of the Employer's name and the water meter's unique reference number shall be fixed to the external face of the access door. Contractors or equipment manufacturers details shall not be fixed to the external face of the access door.

The enclosure shall be well-ventilated, dust-proof and vermin-proof, and be suitable for robust use in a tropical climate. It shall also be suitable for:

- The housing of the integral data logger and the temporary housing of a battery powered data logger which could periodically be used in conjunction with the water meter
- the permanent housing of any lightning protection system
- the permanent housing of GPRS transmitter and battery pack, and any other items necessary to facilitate communication with the SCADA system.
- mains pressure recording - see (b) below

Except where the cable is underneath the concrete plinth, there shall be a minimum of 500 mm cover for the cable. The cable shall be surrounded by a sand bedding at least 75 mm thick and interlocking cable protection tiles shall be installed above the cable. An 'electric cable' warning tape shall be installed above the tiles. Wherever practicable, the cable shall be installed at least 600 mm away from any other cables.

Details of the sensor, including its diameter and the size of main together with a unique reference number, shall be permanently indicated on the outside of the cabinet enclosure housing the electronic display unit. A laminated copy of the record plan shall be installed in each meter cabinet.

7.6 Particular Requirements for Field Instruments and Communication Equipment

The Contractor shall commission and make operational the field instruments and communication equipment's upon installation. Please note that the Contractor has to bear all communication costs including SIM charges &internet and any other cost during the construction period , defect liability period.

7.7 Transferring Field Data to SCADA System:

The data from Bulk Flow meters should be transferred to BWSSB Server(The Server shall be provided by BWSSB)

B- Scope of Work for Integration:

As part of this current contract, the contractor's scope of work on a minimum shall include to transmit the data from each bulk meter to the central server via wireless redundant communication link (GPRS). During detailed engineering (DDE), the final integration server (central SCADA server) tie in point shall be finalized between BWSSB and the contractor for the data to be transmitted to the central server.

As part of scope of work in this contract, the contractor shall conduct a interoperability test to confirm & demonstrate that the data from the bulk flow meters can be received & transmitted by the central SCADA server using appropriate OPC server & client software. The test shall be carried out in presence & co-ordination with the central SCADA server.

The contractor shall note that the bulk flow meter data which is to be transmitted to the central SCADA server server is to be mapped / programmed in the same format as required at central SCADA server for integration. Ensuring that the data is as per the format required by the central SCADA server shall be part of integral park of the contract. The contractor shall be responsible for the availability of bulk flow meter data at the integration Front end processor servers (FEP) end at all times. Contractor shall note the importance of this clause.

The contractor shall be responsible for the instrumentation system in transferring their data from various online field instruments to Central SCADA system.

SECTION 7: DRAWINGS

SECTION 8: BILL OF QUANTITIES

Sl. No.	Specification of work	Unit	Qty	Rate
1	Dismantling of kerb stones by mannual means ansd disposal of dismantled materials with all lead and lifts	Mtr	51	
2	Earth work excavation for pipeline trenches in all kinds of soils by mechanical means as per drawing and technical specifications, including setting out, construction of shoring, strutting, barricading, caution lights, bracing, using sight rails & bonding rods at every 100 mm wherever necessary as directed, removal of stumps and other deleterious matter, dressing of sides and levelling the bottom of trench to the extent required , utilising the available excavated earth locally for the work etc., and all other appurtenances complete in the following strata. All kinds of soils. Depth upto 1.50 m	Cum	90.72	
3	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3in volume and stock piling at designated	Cum	9.0	

	locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately			
4	Supply, installation and commissioning of Battery operated EMF meters as per site conditions & with hard rubber approved make to the water supply mains commissioning, transferring data from field meters to UFW SCADA server via GPRS as per specification and as directed by Engineer. (including cost of GPRS/GSM (4G/ latest) network transmitter & cabinet box) other meters as per drawings. (the meters proposed should be Battery operated with GPRS transmitter). the rate shall be inclusive of cost of meters, sensor cable, RTU transmitters, Display unit, Battery and consumables for the installations, monitoring equipment's & communication system and all accessories. **100mm**	Set	8	
5	**150mm**	Set	8	
6	Providing, fabricating, supplying and fixing at site various diameter MS MJ ends to suit CI / DI pipe as per the sketch . The cost is inclusive of all materials, i.e, rubber 'O' rings, flanges, bolts and nuts, consumables, hire charges, tools and tackles, welding equipments, lead and lifts, etc. complete as per the instructions of Engineer in charge. - For CI / DI pipes of 100mm dia	each	30	
7	For150 mm dia	each	24	
8	Manufacturing, providing, transporting, rolling, lowering, laying, jointing & testing and commissioning of MS specials of minimum 8mm thick such as bends, tail pieces, reduces etc. conforming to IS-7322:1985 with latest amendments and including perfect linking and welding of joints to correct position including cost and conveyance of materials with all lead and lifts, cost all labour and giving satisfactory hydraulic test as per IS:3589:2001 with latest amendments for test pressure and working pressure both at factory and site etc. complete as per detailed specifications with inside lining two coat of food grade epoxy painting of approved make with each coat of 250 micron thick (after dry) over one coat of food grade epoxy primer of approved make with minimum of 50 micron thick (after dry) and outside 25mm thick coating in CM 1:3 by providing 50x50mm weld mesh including loading and unloading of the pipes for the following category to suit PSC / MS / CI / AC / DI / PVC pipes. The weight of MS shell only by considered before lining and coating for arriving at the rate. The thickness of plate will be specified by the engineer. (Contractor will make his own arrangements for procuring water for testing) for: Pipe bends, branches, tail pieces, reducers etc. for upto 500mm dia pipes 100 mm dia 45 degree bend- 2 no, spool pipes and collor etc	Kgs	3700.00	

9	Providing, fabricating, supplying and fixing at site various diameters of MS Flanges as per IS standards to fix sluice valves as per sketch. The rate to include cost of all materials, labour, consumables, hire charges for tools and tackles, welding equipments etc. complete as per instructions of the Engineer in charge for: Flanges of 100mm dia of 10mm thick	each	40	
10	Flanges of 150mm dia of 12mm thick	each	128	
11	Supply of GI Pipe Class B As per IS -1239 GI Pipe 15mm dia	Mtr	180	
12	Laying of cable in existing trench/GI Pipe/Stone ware/RCC hume pipe using wooden/aluminium rollers as directed by the departmental staff 20 to 25 Sq mm	KM	0.18	
13	Dewatering Pump 10 HP	Hr	108	
14	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately) Mix 1:4:8 (M10) Using 40 mm nominal size graded crushed coarse aggregates	Cum	9.79	
15	Providing and fixing Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge	Kgs	5600. 00	
16	Supplying and fixing angle iron frame work fabricated out of M.S. angle iron.. and M.S. Flat.....with bolts, washers etc., and painted with 2 coats of red oxide and then two coats of approved paint. 40 x 40 x 6 mm	Mtr	320	
17	Providing, filling and laying of sand bags filled with sand / clay for diversion of sewage during execution of work.	each	216	
18	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surface and compacting with vibratory roller to	Cum	45	

	achieve the desired density. -		
19	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations and other similar works etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m	Cum	54.83

Note:

(1) Item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities (refer: ITB Clause 11.2 and CC Clause 37.2).

(2) Unit rates and prices shall be quoted by the Tenderer in Indian Rupees.

(3) Where there is a discrepancy between the rate in figures and words, the lower of the two will govern. [ITT Clause 24.1(a)]

(4) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern [ITT Clause 24.1 (b)]

Executive Engineer

(UF

W)-2 Division

SECTION 9

FORMAT OF BANK GUARANTEE FOR SECURITY DEPOSIT

To: _____ [name of Employer]

_____ [address of Employer]

WHEREAS _____ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ [name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of Rs._____ [amount of guarantee] [4]Rupees_____[in words], and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of -_____ [amount of guarantee][5]as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 30 days from the date of expiry of the Defects Liability Period.

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[4]An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract

[5]An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract

Executive Engineer

(UFW)-2 Division

Signature and seal of the guarantor _____

Name of Bank _____